

# AIRFIX magazine

November 1974  
FOR PLASTIC MODELLERS  
monthly 18p



## in this issue

Farnborough report plus SR-71 profile  
Uniforms of Marlborough's grenadiers  
Bristol 138A history and scale plans



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For aviation enthusiasts the book begins with an account of the Hawker Harrier's current operational status with the RAF and US Marines, including modelling notes of practical value to anyone working in 1:72 or 1:24 scale. This is followed by a feature on American B-29s and B-50s based in Britain between 1948 and 1953, which includes two pages of drawings showing tail fin insignia. Alan W. Hall then gives practical modelling instructions for converting the Airfix Halifax kit into a B Mk II; Bryan Philpott describes a conversion using Airfix He 177 components to produce a 1:72 scale model of the Luftwaffe's wartime jet bomber, the Ju 287; and finally Gerald Scarborough shows how to produce a 1:72 or 1:24 scale model of the Rolls-Royce Dart powered Cavalier Mustang III.

For those who prefer wheels to wings there are two 1:32 scale conversions. First is a model of the Bentley which took part in the 1969 London-Sydney marathon, constructed from the Airfix Bentley kit; while the second model will appeal to military enthusiasts as well, since it is a conversion of Monty's Humber to a wartime wireless truck. There are also two tank conversions for military modellers, the first from the Airfix Churchill kit to the Churchill 3-inch gun carrier; the second showing how to super-detail the Airfix Tiger kit, including all internal components from engine to gun breech.

An unusual project for model soldier enthusiasts is a fine conversion of the Airfix 54mm Highlander to a Japanese Samurai warrior, while on the nautical side there are features on modelling the Airfix Cutty Sark kit in a bottle and scratch-building a canal narrow boat. An attractive little 00 gauge model of a tunnel inspection and repair wagon by Michael Andress, together with the two regular features, Pick of Photopage and Photo Quiz, complete the line-up for this year's Annual.

Published on September 30 1974 by Patrick Stephens Limited in association with Airfix Products Limited.

96 pages, 9½" x 7¼" (244mm x 184mm), 186 photographs and 133 line drawings. Case bound with full-colour laminated cover.

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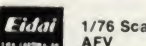
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Michael Andress & David Armitage

For publication on November 11



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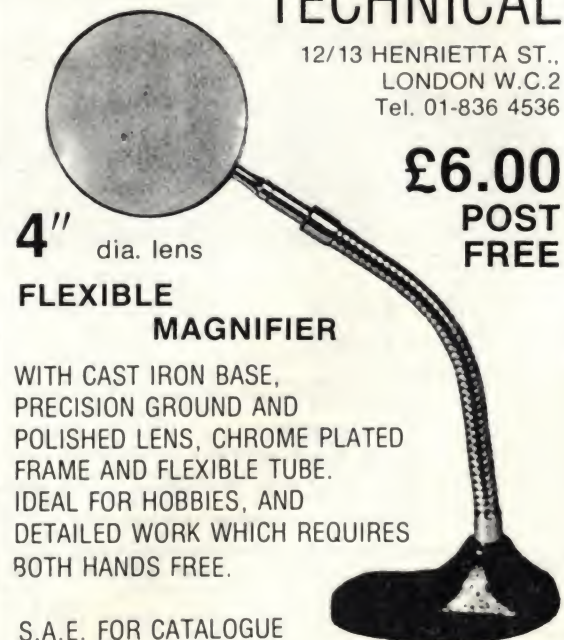
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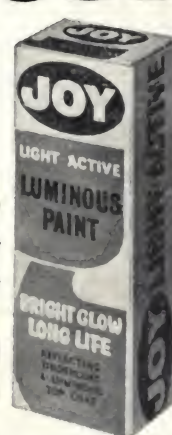


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# AIRFIX magazine FOR PLASTIC MODELLERS

November 1974  
Volume 16 Number 3

Editorial offices  
Bar Hill  
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Editorial Director **Darryl Reach**  
Editor **Bruce Quarrie**  
Art Editor **Ian Heath**

## Cover Picture

Useful colouring detail shot for anyone modelling the 1:76 scale FV 432 armoured personnel carrier described in our May issue. This photo, which was kindly supplied by the Ministry of Defence, is believed to have been taken a couple of years ago at Warminster, and the vehicle itself is now thought to belong to the 2nd Battalion, Royal Irish Rangers. Can any reader identify the unit using it in this shot, however, since the unit badge which normally appears on the left-hand side of the hull front has been obscured and the beret badges lack sufficient definition to identify? The FV 432 is now in use with practically every unit in the British Army, which doesn't help matters!

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# in the air



Farnborough — wet but no wash-out



Top Ghana Air Force Skyvan. Above VIP Skyvan destined for Ghana Air Force Communications Squadron. Below CH-47 Chinook.



THE FARNBOROUGH Air Display of 1974 will long be remembered for two reasons. One was that it was the first truly international Farnborough with participants from the USA appearing in force for the first time. The second reason was the appalling weather that chose to unload itself over Laffans Plain during most of the week. Regular Farnborough visitors have become used to freak weather over the years but the wet of 1974 will long live in the damp corners of many memories. Not only was it wet but strong winds added their quota to the extent that walking through the marquees became a nerve-racking experience, and for the display pilots it was a definite hazard. It is a tribute to the pilots to say that just to take off on some days was a marvel, but they went further and rarely allowed the foul conditions to affect their routines.

First on the display programme every day was Concorde 02 giving a very fine performance with none of the smoky exhausts of past performances. After Concorde the display featured all the familiar sights we have come to expect from the past, but this year was a vintage one for the new types giving their first public appearance. Top of the Pops for many was the first sight of the Hawk Trainer which put on a bright little display, and still smelling of the assembly shop was the Short SD3-30 commuter transport.

From overseas, once we had got used to the presence of the SR-71, the hit was the first showing in Europe of the F-15 Eagle in the shape of a TF-15. This surprisingly small fighter looked like a mock-up in its light blue day superiority colour scheme but its flight demonstration was most impressive with tight turns, low-speed yaws, and when the weather allowed, vertical climbs and rolls. This fighter is well up in the race for a potential F-104 replacement in Europe so we may well be seeing more of this potent beast in years to come.

What was probably the best display flying



Above Concorde squeezing the moisture out of the air. Right the prototype Hawker-Siddeley Hawk trainer. Below right Jaguar from Lossiemouth. Bottom two views of the TF-15 Eagle.

to be seen at any show for some years was provided by two camouflaged Viggens from the F7 wing based at Satenas. The two aircraft took off and performed in very close formation. Rolls and loops were performed with the two remaining in tight formation, so tight that at times the pair had the appearance of being one odd-shaped aircraft. After very short landing runs, one Viggen did the usual reverse and turn round manoeuvre we have got used to, but even now it still looks impressive. Anyone with any queries on Viggen camouflage had the opportunity of examining two examples in the static park, one of which was a two-seater.

There were helicopters in profusion. On the Press Day, the unfortunate accident to the Blackhawk resulted in the death of both crew members but during the rest of the week there were no serious mishaps. On show were the Chinook, HH53, Enstrom

Continued on page 148





# NEW AIRFIX MODELS



## BAC Canberra 1/72 Scale Series 5

The first wooden mock-up of the BAC Canberra was built in a converted basement garage in 1949! Humble beginnings indeed for Britain's first jet bomber. Some twenty years later this remarkable plane was serving in more than sixteen air forces throughout the world.

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## American Soldier 1775 54mm Scale Collectors Series

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When assembled the figure measures approximately 2 1/2" high.

## Japanese Chi-Ha Tank HO/00 Scale Series 1

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When fully assembled the model measures approximately 3" long. It is moulded in green polystyrene; decals and painting instructions are provided for a commanding officer's machine in action in Malaya in 1942.

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F.28, SA 360 Dauphin, Bolkow Bo105, and the usual Westland contribution of Sea King, Gazelle and looping Lynxes.

Almost in the helicopter class was the Harrier. As well as the impressive vertical take-offs by G-VTOL, a laden RAF version did roller take-offs, and as one of the last items, a total of nine 1 Squadron Harriers took off for a mock attack. On some days they were backed up by Jaguars from Lossiemouth.

Other highlights of the show were the remarkably quiet take-offs of both the Tri-Star and A-300B, with the latter in Air France livery as a reminder that it is now a familiar sight at LAP. Trios of Dassault executive jets and Fokker transports flew over on most days but on some days the weather combined with engine snags reduced the French contribution. Islanders and Trislanders cavorted as usual and a Ghana Air Force Skyvan added unusual interest to the flying. A Nimrod gave a typically noisy turn in what was often typical Nimrod weather and when the weather allowed, a British-registered Wilga towed Polish gliders aloft. From Scotland came the Jetstream and Bulldog, and from Italy the MB 326K and Partenavia P68.

On the ground the static was dominated



Top right the meteorological Hercules W.2 gets out of the way before the show begins. Above right the first Short SD3-30. Right the ill-fated Sikorsky S-67 Blackhawk N6716A. Below Defender destined for the Sultan of Muscat and Oman's Air Force. Above the smile on the face of the TriStar.



by a C-5 Galaxy with a S-3 Viking and P-3C Orion nearby. Two BAC 111s were on display, one with a hush kit over the Speys, and an unusual item was a Defender for the Omani Air Force.

If the above seems a long list of things to see it must be said that it is not complete. In many ways the old Farnborough Show has been replaced by something almost as overwhelming as the Paris Show, but the two shows are still very different. At heart, Farnborough is still the same as it has always been with a friendly open approach to things, and thankfully the display flying programme is still as good, precise and interesting as it has always been.

But over this year's show hung not only rain clouds but the clouds of uncertainty regarding the future of Britain's aircraft industry. If nationalisation plans are carried through from proposals to action, by the time the next Farnborough is due things might be very different and what shape the display might take is anyone's guess. But that is in the future and at present we have many good memories of this year to look back on — even if the weather was terrible!



Top Viggen take-off. Numbers are yellow and the suppressed aerial behind the '7' is white. Above right third prototype Alpha Jet. Right A-300B Airbus. Below 1 Squadron Harrier doing a wet take-off.





# Blackbird over the Black Sheds

A report on the Lockheed SR-71's appearance at Farnborough by Terry Gander

ON SUNDAY, September 1 1974, there landed at Farnborough what must be one of the most advanced and exotic aircraft that has ever been seen at even that home of the science of flight. This exotic beast was none other than the Lockheed SR-71, often known as the Blackbird, and for many aero-philes that landing was one of the highlights of the aviation year, for even a short while ago no one would ever have dreamed that



what for years has been one of the most elusive of all aircraft, would ever be put on public exhibition in any country, let alone the United Kingdom.

For the fact is that for many years the SR-71 has been one of the Western World's most closely-guarded 'spy planes', as well as one of the most advanced aeronautical technical achievements to fly.

When it landed at Farnborough it brought with it a new transatlantic record, for as anyone knows by now, the Atlantic was crossed in the remarkable time of 1 hour 55 minutes and 45 seconds, which even in these days of over-exposure to superlatives is something to make anyone sit up and take note. What is truly extraordinary about this flight is that it was not intended to be a record flight — it was just a demonstration — and that the aircraft design that made the record was over ten years old. A closer look at this aircraft is therefore called for.

The SR-71 was intended as a high performance successor to the notorious U-2 spy plane and was intended for clandestine reconnaissance missions over any part of the globe. A thorough search of American defence budgets will not reveal where the money used to fund the design and assembly of the SR-71 actually came from, and the origins and intentions of the people who envisaged the need for such a vehicle will be shrouded in mystery for many years to come.

The actual design and assembly work was carried out at the infamous 'Skunk' Works at Burbank, California, under the guidance of C. L. 'Kelly' Johnson, who was the guiding hand behind the earlier U-2 and the F-104.

The first aircraft off the 'line' was known as the Lockheed A-11 and after a while the true intention of the design was hidden behind the designation of YF-12A. After a few years of record-breaking and development flying the YF-12A faded into the background and the SR-71 took over what little limelight was allowed to fall on what has become one of the most closely guarded aircraft of all time.

The existence of the A-11 was first admitted in 1964 but when the first flight and the origins of the design work actually took place has been guessed at but not actually recorded in print. One source stated that the first flight was on December 22 1964, but that date refers to the SR-71

November 1974

**'One of the most advanced aeronautical achievements to fly'**



## Technical data

Power plants	Two Pratt and Whitney J58 (JT11D-20B) each giving approx 32,500 lb thrust
Length	107 ft 5 in
Span	55 ft 7 in
Height	18 ft 6 in
Weight (approx)	172,000 lb
Speed (estimated)	Mach 3.2 - 3.5
Ceiling (estimated)	100,000 feet
Maximum range	3,000 - 3,500 miles



proper and not to the original A-11 which must have taken place much earlier.

In service today the SR-71 is handled by the 9th Strategic Reconnaissance Wing based at Beale Air Force Base in California, which is where the Farnborough example, 17972, flew over from. The aircraft, commonly nicknamed Blackbirds because of their colour, are operated by the Strategic Air Command, and for many years now have been busy keeping an eye on the trouble spots of the world. They have been observed at work during the Middle East Wars and have doubtless been active elsewhere. It should be stressed that the Farnborough visit was not the first UK visit by the type, for on occasion it has staged through various UK bases, usually at night and usually at a time when there has been tension in the Middle East. Rumour has it that at no time are there more than eight SR-71s at Beale and that total includes a special two-seat trainer, the SR-71C.

One of the main difficulties about a description of the SR-71 is that even now, after over ten years, relatively little is known about it. Its performance has been demonstrated on many occasions — an example is the recent record, and that set up by the YF-12A in 1965 when it flew at a speed of 2,070



mph. Another example was the distance record of 15,000 miles flown at a speed of Mach 3, even though it had to slow down for refuelling. It seems very likely that the SR-71 can fly at speeds of well over Mach 3 at an altitude of over 90,000 feet but obviously confirmation of such performances is not likely to be forthcoming.

The aircraft is powered by two Pratt and Whitney J58 turbojets which are carefully faired into the small delta wing. In comparison the wing is small for the length of the faired fuselage which is nearly all fuel tank. Titanium is extensively used in the construction, and the whole design is notable for the extensive use of a slender aerofoil cross section.

The flush surfaces are painted black to counter thermal effects at high speeds, but a point to remember is that Concorde's are painted white for the same reason!

The SR-71 can carry a very wide range of recon sensors, cameras and radar but these are usually carried in a slender ventral pod which was not fitted to the Farnborough visitor and does not appear to have been seen on any published photograph. The contents of that pod would be of great interest to many defence attachés, as it contains what must be some of the most advanced electronic gadgetry ever devised by man. The sensors carried can certainly pick up and record the presence of vehicles and installations from high altitude and present or transmit them back to base in a form almost ready for use, but in this realm one is dealing with pure conjecture.

What is not pure conjecture is that the SR-71 crews must be some of the most carefully selected and highly trained of all conventional aircrews. Only the Space Programme can be cited as being more selective and demanding. Initial training is carried out in the little T-38 Talon trainer which apparently has handling characteristics similar to those of the Blackbird, and conversion training is carried out in a special trainer version of the SR-71. The crew of the SR-71 consists of two men, the pilot and the reconnaissance systems officer (RSO), who also acts as co-pilot and sometimes as navigator. Both men wear what resembles the familiar American space suit, complete with domed perspex helmet.

The appearance of the SR-71 at Farnborough in one way signals the end of an era. It shows that the day of the strategic reconnaissance aircraft is nearly over, and its place is being taken by the space satellite. Despite being one of the most advanced aircraft in the world, the SR-71 has been overtaken in its role by the automatic robot eye of the space age, but it still seems very likely that the Blackbird will keep its eye on world events for some time to come.

Still partially shrouded in mystery, its first public showing in Europe has stirred the imagination of many and has given many thousands of air-minded youngsters a new target to aim for. Aviation enthusiasts of all types will remember its shape in the sky over the Black Sheds for years to come but let us hope that it will not be the last time we can see this fascinating aircraft. □

## Return from Balaclava

Second instalment in this new Crimean War series from Sid Horton

THE SUBJECT OF this month's conversion is the figure of a 4th Light Dragoon trooper, kneeling over his dead or wounded horse, which can be seen in Lady Butler's painting just off centre, partially hidden by the standing figures, which I shall be dealing with in next month's article.

There was supposedly a great affection between a trooper and his mount, the English being renowned animal lovers, which is well illustrated to the point of nausea in some of the more recent books on the 'Charge', but in this series I will stick for my information to that fountainhead and starting point of all later works on this period, namely A. W. Kinglake's *Invasion of the Crimea*, itself an obviously biased book, being as it was, written for and commissioned by the Raglan family. Still, here's what he has to say about the first muster of the Light Brigade:

"It was upon one of the slopes which look southward towards Balaclava that the muster took place; and, for some time, stragglers and riderless chargers were coming in at intervals; but at length there was a numbering of horses, and afterwards the

"It will be vain to seek for any correspondence between the result of the first muster and the casualties. Many wounded men and wounded horses might be present at the muster, and on the other hand, neither the unwounded men whose chargers had been killed, nor the unwounded horses which came back into our lines without their riders would contribute to the 'Mounted strength' as ascertained at the first muster."

"These figures may not agree exactly with other returns, but I have good reason for believing them to be accurate."

melancholy roll-call began. As often as it appeared that to the name called out there was no one present to answer, men contributed what knowledge they had as to the fate of their missing comrade, saying when and where they last had seen him. More or less truly, if they knew it not before, men learned the fate of their friends from this dismal inquest. And then also came the time for the final and deliberate severance of many a friendship between the dragoon and his charger; for the farriers, with their pistols in hand, were busied in the task of shooting the ruined horses.

'Upon counting the brigade, it appeared that the force, which numbered 673 horsemen when it went into action, had been reduced to a mounted strength of 195,\* and there was one regiment, it seems, namely, the 13th Light Dragoons, which, after the charge, mustered only ten mounted troopers. From a later examination it resulted that, in officers and men killed and wounded, the brigade had suffered losses to the number of 247, of whom 113 had been killed and 134 wounded; and that (including 43 horses shot as unserviceable on account of their wounds) the brigade had 475 horses killed, besides having 42 others wounded."

As you can see from the photographs, this conversion is a man kneeling over his wounded or dead horse. Forget for a moment the military trappings of the Crimean War and it could suggest other possibilities, eg. it could just as easily, with a little work to the figure, be a trooper of cavalry in the war against the American In-

Continued on page 155



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10 Afrika Corps Infantryman arm raised  
11 Afrika Corps Infantryman dispatch case  
12 Paratrooper at ease  
13 Paratrooper throwing grenade  
14 Paratrooper grenade stance  
15 Afrika Corps Infantryman shorts  
16 Afrika Corps NCO arm raised  
17 NCO Paratrooper kneeling with small arms

**24 Afrika Corps Infantryman adv with brief case**  
**25 Officer peaked cap binoculars**  
**26 Paratrooper with chute**  
**27 Infantry Officer pointing**  
**28 NCO at ease**  
**29 Infantryman rifle slung**  
**30 Officer forage cap pointing**  
**31 Paratrooper small arms**  
**32 Paratrooper grenade throwing**  
**Japanese Infantryman Aiming rifle No 14**

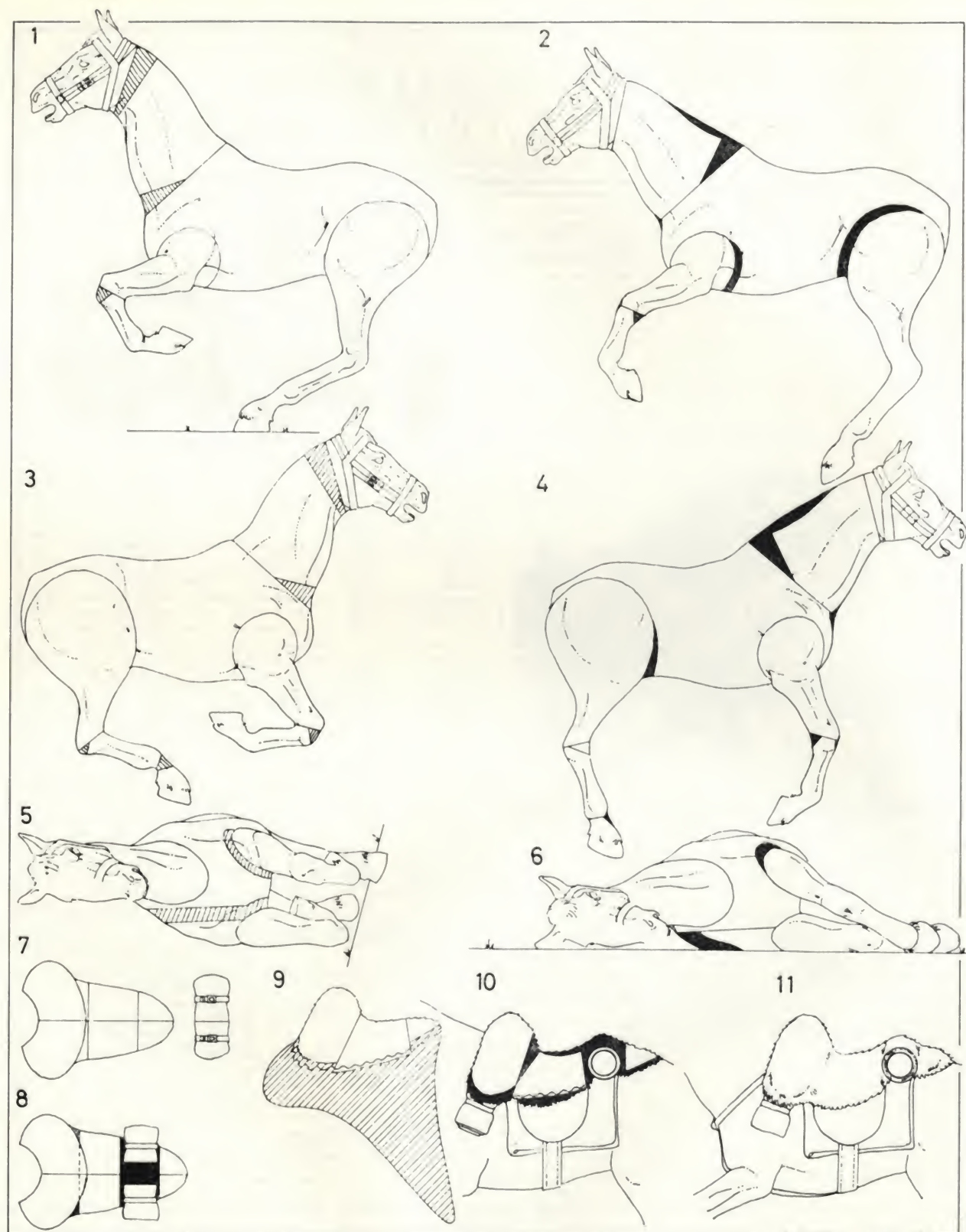
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s. horton sept 74  
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# Continued from page 152

dians, firing from the shelter of a dead horse. As I keep saying, think, and other possibilities of this conversion should readily spring to mind, possibilities which suit your own 'thing'. Use it as a starting point.

For Crimean buffs here we go with a quite expensive conversion. The kits used are the Airfix Hussar, Scots Grey and the new Rifleman. The parts used are the head and body from the Hussar, the kneeling legs and arms from the Rifleman, the horse from the Scots Grey, sheepskin from the Hussar and the saddleblanket, etc. from the Scots Grey, plus sword No 228 from the Historex spares list.

First, a word about the drawings. All shaded areas are removed and all black areas filled. The horse must be completed first. It is easier to have the horse as a starting point for the figure, than to convert the horse to fit the finished figure, obviously.

Take the horse from the Airfix Scots Grey kit and consign the rest, for the moment, to the spares box. Cement the body halves together and allow to dry thoroughly. Using drawings 1 and 3 as a guide, and using a razor saw, carefully saw right through the neck, removing it and placing it to one side for the time being.

Again, using drawings 1 and 3, remove all four legs with diagonal cuts, carefully, using a razor saw. Now lay the body of the horse on its side; you will notice that, because of the convex side and belly it does not lie as an animal should, so carve away at the side until it does. You have to be quite brutal at this point.

When this has been done to your own satisfaction start replacing the legs, the underside ones first, using drawings 4 and 5 as a guide for their position. Note here that the shaded area in drawing 5 around the chest and underside leg has to be removed to allow the 'lie' of the animal to be correct. Repeat this procedure to the rear leg (not shown in the drawings) and cement legs into the position shown in drawing 4.

Keep laying the horse on its side to check that you have a convincing 'lie'; only by constantly checking, carving, cutting and re-cementing will you get it 'right'. It's very difficult to explain but, as you will find, quite simple to do.

Now you should have a horse body with the underside legs in the desired position lying convincingly on its side. The nearside, or in this case, upper, legs can now be cemented in place but before they are, note that in drawing 5 a shaded area is shown. This has to be removed by gradually carving away the plastic and checking the angle of the leg, remembering that when it is finally cemented in position the hoof should be resting on the ground and not sticking straight out from the body (or it will look like a rocking horse which has been knocked over). This procedure is repeated with the rear upper leg.

While all this is drying, work can be completed on the neck. A triangle is removed from the front, as shown in drawings 1 and 2. Keep this as it can be used as a basis for the filling in the back of the neck. Shown as a black area in drawings 2 and 4, the shaded



The model before finishing and painting clearly showing the extensive use of Squadron Green Stuff.

area behind the head also has to be removed at this point. The neck and head are cemented in place again, constantly checking that the 'lie' is correct.

Remembering that this horse is relaxed in death, and is a heavy animal, most of this conversion can only be done by 'eye', constantly checking and recementing to get the right look. When the horse is completely dry, place a reasonably rough piece of wet and dry paper on a flat board and rub the underside against this, using a circular motion, so that the underside of the horse is flattened out. Fill any gaps with Green Stuff and when dry sand smooth.

Take the sheepskin and shabraque from the Hussar kit and, using drawing 9 as a guide, cut away the shabraque, cement the two halves of the sheepskin together and allow to dry thoroughly, then make the cuts shown in drawing 7. Also, at this point, saw right through the portmanteau.

Drawings 8 and 10 show how the various parts of the sheepskin are re-assembled on the horse. You will notice in these drawings that quite a large amount of filling is necessary. Take the blanket and saddle flaps from the 'Grey and cut to fit the underside of the sheepskin. Cement in place. Only one of

these is needed as the underneath one cannot be seen and it will spoil the lie of the horse. A large piece of the sheepskin bulge covering the rolled cloak also has to be carved away at this point. Again to assist the lie when all of this is thoroughly dry, cover the whole of the sheepskin liberally with Green Stuff and work this up with a needle in a fur-like texture.

The reins, girth and the rest of the harness can now be added, made from the 5 thou plastic card supplied with these kits, cemented in place with Mek-Pak or a similar liquid adhesive.

Take the head from the Hussar kit. The basic head is drawing 12, and carefully carve away and sand smooth the fur of the busby, as shown in drawing 13. To represent the shako in its foul weather cover, a circle of scrap plastic from an odd base cemented on top of the busby, thereby raising its height. This is shown in drawing 14. A peak is also added at this point, made from the 5 thou plastic card supplied, as is the chinstrap. Fill any slight gaps with Green Stuff and build up the whiskers with Green Stuff. Clean up the collar at this point. Cap lines are made from stretched sprue and the head placed to one side.







Cement the two body halves together and allow to dry out thoroughly. Now make the diagonal saw cut shown in drawing 16 right through the body. Carve away all decoration and sand smooth. Now, to that cut you have just made, more work has to be done. Using drawings 17 and 21 as guides, chamfer away the bottom shaded area at the bottom, diagonally the other way. Cut right through the body at chest height and remove the triangular shaded area shown in drawings 17 and 21. Cement the parts back together again and you should have something like drawings 18 and 22.

Take the legs from the Rifleman and

generally clean up. A small section of the plastic has to be removed from the left leg, shown as a shaded area in drawing 25, to make the figure kneel properly and not in a lopsided manner.

A small wedge of plastic is added to the front crotch area, to separate the legs a little more widely. This you have to do by eye as the legs are positioned each side of the sheepskin-covered rolled cloak. Cement the legs together and when dry, the small shaded area shown in drawing 26 is carved away. The whole figure can now be assembled. This all has to be done by eye and trial and error. Cement the horse on a

temporary base and place the legs in position. Try the body for fit and check the angle over the horse's body. Correct by carving away the plastic and trying again. When satisfied cement the body in position. This same procedure is followed for the head and arms. When satisfied with the general 'look' of the figure, fill any slight gaps and sand smooth.

The detailing of the figure; the water-bottle and haversack from the 'Grey, the pouch from the Hussar, the various belts are cut from the 5 thou plastic card supplied with these kits, and cemented in place with Mek-Pak or a similar liquid adhesive.

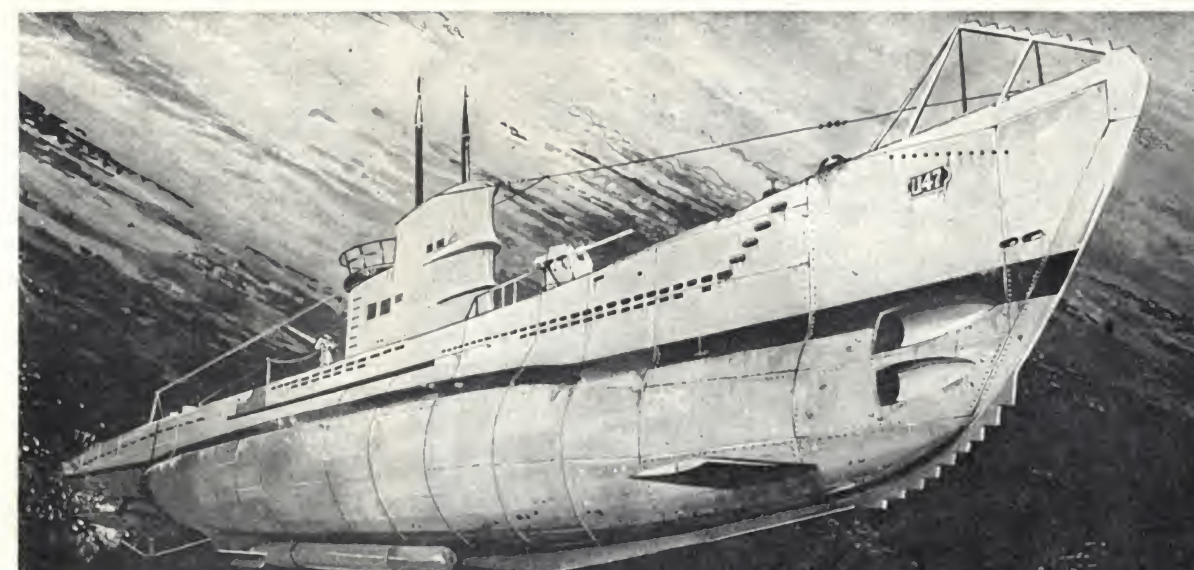
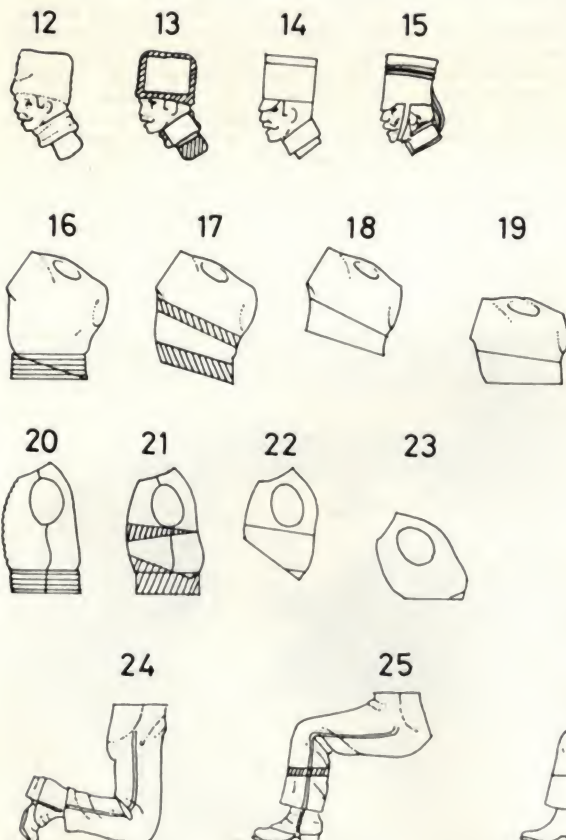
### Painting

As usual I will give only the colours.

The horse in the painting is white (which caused me problems of shading). Horse blanket mid-grey, rolled cloak navy blue, harness, etc, brown leather.

Shako, black oilskin cover, yellow cap lines, brass chin scales. Coatee navy blue, collar and cuffs scarlet, outlined in yellow. Buttons brass, waist belt yellow/red/yellow, etc.

Overalls — here we come into some conflict. The stripes are sometimes shown yellow, which I have used, and sometimes scarlet. Overalls themselves navy blue. Boots black. □



## "Achtung. One Battleship sunk, one damaged...and we're through!"

In September 1940, U-Boats had torpedoed and sunk the Royal Navy's aircraft carrier "Courageous". Eager to retain the propaganda initiative, Kommodore Doenitz — then head of the U-Boat fleet — planned a daring raid on the RN base at Scapa Flow.



Doenitz put his plan to one of his most promising U-Boat commanders, Korvetten Kapitän Gunther Prien of the U-47, and gave him 48 hours to accept or decline the mission. Prien accepted. On October 13th, U-47 surfaced towards Kirk Sound. Still surfaced, U-47 navigated Kirk Sound and by 12.27 had wormed her way into the main anchorage without being seen. Prien sighted two battleships — the Royal Oak and Repulse. He attacked. Only one of the first three torpedoes detonated — and a low order detonation at that! Frantically, Prien reloaded and fired again. The unexpected happened. The Royal Oak exploded.

Prien saw blue, yellow and red flames leap skywards. He guessed he'd hit a magazine. A wall of water shot up, and Prien himself described it as "though the sea suddenly stood on end". The Royal Oak sank within 13 minutes, taking with her 24 officers and 809 enlisted men.

Now U-47 had to run for her life. Scapa Flow roused, patrol boats and destroyers scurried in search of the intruder. Laboriously — U-47 wriggled back through the narrows. The tiny submarine eluded the searchers and escaped.

One of the most daring exploits of the war had been completed successfully — and each member of the U-47's 44-strong crew received a second class Iron Cross. Prien himself was awarded the first class medal.



Five months later, on March 8th, 1941, U-47 was surprised by the destroyer HMS Wolverine while tracking a convoy, and sunk with all hands.

Further reading: U-BOAT COMMANDER by Gunther Prien. Tandem.

Revell's 1/125th scale U-47 is full of stunning detail.



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# The Fleet Air Arm in war and peace

Part two of this new series on the FAA's history and aircraft by John D. R. Rawlings



WHEN, ON APRIL 1 1918, the Royal Naval Air Service ceased to exist, it had reached a stage at which it was just solving many of the main problems which had dogged naval aviation since its inception. At sea the classic shape of the aircraft-carrier, a flush-decked vessel, had at last become a reality with the building of HMS *Argus*. In coastal waters and beyond, a succession of John Porte's flying-boats provided the first effective maritime reconnaissance aircraft and, in the strategic bombing field, Handley Page's O/400 had become the foremost heavy bomber of the war; so much had it impressed itself upon the nation that the Concise Oxford Dictionary, even after the Second World War, still contained the entry 'Handley Page, a type of large aeroplane'. No such appellation graced the Lancaster or Fortress, for example.

So it was a bitter pill for the Navy to swallow that, at this significant moment in its history, the whole of its aviation service was wrenched from it and put into a new and untried service. Whether this was the right or wrong decision in the country's interests has been argued ever since, and will continue to be so, but it meant, for the Navy, that its aviation affairs were not catered for as it would have wished for two and a half decades.

As we mentioned last month, this made little difference so long as there was a war on for the British serviceman, whatever his uniform, has the propensity of getting on with an important job in hand whatever the politicians deem. But when the Armistice was signed and peace came, the in-fighting within the Whitehall corridors of power had its dismal effect on naval air affairs.

Naval air matters were now the prerogative of the Royal Air Force, which maintained its Fleet Air Arm. Because most of the Navy's aviators were enthusiasts they had transferred to the new service and the Navy itself was left with a dearth of officers with practical naval flying experience.

The RAF, too, was drastically reduced in size in 1919 and so, when the brand-new carrier *Argus* was commissioned, the flying components of the Fleet Air Arm comprised half a torpedo bomber squadron, a fighter flight, a spotter reconnaissance squadron for the *Argus*, and in addition, a seaplane flight and a flying-boat flight. The only new aircraft were the torpedo-bombers, Sopwith Cuckoos, the first purpose-built torpedo-bomber to see British service. These units were manned and serviced by the RAF and under its control except when afloat when

**Top left** the first successful torpedo-bomber in the Fleet was the Blackburn Dart. This one, from HMS *Glorious*, is temporarily painted in Nivo green for night exercises (MoD). **Centre left** in an attempt to meet the Navy specifications, the British aircraft manufacturers had a hard job with their first generation of aircraft after the First World War. This Avro Bison, of 421 Flight, had a central chartroom with bowed picture windows! (P. T. Capon). **Left**... while the Blackburn Blackburn's had four portholes (via J. K. Fletcher).

**Right, top to bottom** the attractive Fairey Flycatcher was both a landplane and a floatplane; this latter seen at Lee-on-Solent in 1926 (E. A. Harlin). Second generation TBR aircraft in the Fleet was the Blackburn Ripon. S1559 here seen dropping a tin fish in Stokes Bay is from the Torpedo Training Flight at Gosport (MoD). The Fairey III F was the maid-of-all-work of the Fleet in the late 'twenties and early 'thirties. These three aircraft are from 824 Squadron, HMS *Eagle*. Later, the Ripon was re-engined by Blackburn to become the Baffin. This one, of 810 Squadron, is at Gosport in the early 'thirties (L. Bridgman).

the Navy could give them orders for operational activities, a complicated system which caused no end of petty harassments and frictions and which the Navy never accepted as the ideal.

But despite this unhappy state of organisational affairs, naval aviation developed slowly but surely. The carrier fleet came into being with *Furious*, having been taken back into dock for re-building, reappearing with a flush-deck like *Argus*; *Eagle*, a conversion from a Chilean battleship, having a through-deck with an island on the starboard side; and *Hermes*, a similar configuration: the latter was the first aircraft-carrier of this size and shape laid down as such in the beginning. By 1925 all these had joined the Navy.

New aeroplanes also appeared but, such were the problems encountered by the aircraft industry in trying to meet specifications drawn up by sailors, most of these aircraft were down on performance compared with their predecessors and of grotesque appearance. Because, in the split-up between the Navy and the RAF, the observers for the fleet's aircraft were of naval origin, the new designs saw the observer's position as paramount. Thus the earlier fleet-spotter-reconnaissance aircraft were virtually chart-rooms with wings added: the Blackburn Blackburn had four portholes to its chartroom whilst the Avro Bison had bowed picture windows! By contrast the pilot was stuck up on top near the upper wings — it mattered not whether he could really see to fly the aircraft! The flying-boat flights retained the wartime Felixstowes well into peacetime and the Navy's fighter and bomber squadrons now became so much part of the RAF that the Navy never saw them again.

1926 was an important year for the Fleet Air Arm for it then carried out the first operation in peacetime of its peace-keeping role, an operation which it has repeated many times since and which, even this year with the operations off Cyprus, has proved the absolute necessity of this country maintaining a strong carrier force. In 1926, however, the troubles were in China whence *Hermes* and *Argus* hastened. The former flew her aircraft on floats from Hong Kong harbour and the latter her landplanes from Shanghai racecourse on anti-bandit patrols, with some success.





Right, top to bottom the classic shape of the Hawker Nimrod single-seat fighter is well shown-off in this shot of a production Mk I on test from Brooklands (Flight). The Fairey IIIF was also re-engined, to become the Seal. This aircraft, seen at Gosport, is from 822 Squadron (L. Bridgman). From the Sea-plane Training Squadron at Lee-on-Solent is this Blackburn Shark floatplane. It also flew, as a landplane, with one or two carrier squadrons (Cdr McTurk). Rival of the Shark was the immortal Fairey Swordfish, which became one of the classic aircraft of the Second World War. This is Lee-on-Solent airfield, unit unknown (MoD).

The big problem in shipboard operations, however, was still the arresting of aircraft on landing. Various systems were devised; one consisted of longitudinal wires along the carrier deck which picked up with clips on the aircraft's undercarriage. This prevented aircraft sliding off the side and provided some deceleration but, unless the aircraft was absolutely flying along the line of the wires, the result was too often a tip up on its nose or wingtip. Another method was to build ramps along the deck up which the aircraft flew, dropping into wells at the end of each ramp, thus dissipating momentum, and the two systems were combined for a while but the only successful solution came in 1928.

By this time the first big new carrier had arrived, HMS *Courageous*, and it was on her that the first transverse arrester wires were installed. Linked with winches, and later hydraulic cylinders, these wires were picked up by hooks under the rear fuselage of the aircraft and accomplished a relatively smooth and trouble-free deceleration. In fact, the system that is used today was proved then.

But by then, also, the first generation of post-war naval aircraft had given way to the second; a much more comely and practical fleet of aeroplanes. As a fighter the FAA had one of the loveliest little biplanes of all time, the Fairey Flycatcher which was available in wheel or float form. This equipped the fighter flights on all the carriers. For FSR (Fleet-Spotter-Recce) duties, Fairey's had refined its Series III biplanes into the Fairey IIIF which was an outstanding maid-of-all-work in the 'twenties and 'thirties; this, too, could use floats as well as wheels and was catapulted from many of the battleships and cruisers as well as being used on the carriers. It was the IIIF which carried out the initial hooked landings on *Courageous*. In the third field, that of Torpedo-Bomber-Recce, the Blackburn Ripon held the field, for carrier operation only. It was really with these types and the fleet of carriers mentioned, together with *Glorious* joining the Fleet in 1930, that the Fleet Air Arm worked up a practical modus operandi and became an efficient peace-time operational force.

The 'thirties saw further development as yet another generation of fleet aircraft came to the fore. The Flycatcher gave way to the

Continued on page 162





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**Top left** the Nimrod was supplemented in the Fleet Air Arm's fighter squadrons by the two-seat Osprey. K2782 of 803 Squadron is just leaving Eagle's deck. Note the smoke jet which acted as a wind sock (The Aeroplane). **Above left** first monoplane in service with the Fleet Air Arm was the Blackburn Skua dive-bomber, here seen with 803 Squadron from HMS Ark Royal (The Aeroplane). **Top right** the other



classic aircraft of this period was the Supermarine Walrus which flew spotting and other duties all over the world. They were carried on most of the Fleet's cruisers, including HMS Suffolk from which K8345 is here being catapulted (Real Photos). **Above right** the 'new' Fleet fighter, as war broke out, was the Sea Gladiator, an ordinary Gladiator with a hook and dinghy.

#### Continued from page 160

Hawker Nimrod, a fleet version of the Fury, and was augmented with the two-seat Osprey. The IIF was re-engined with an Armstrong-Siddeley Panther and called the Seal, and the Ripon was similarly re-engined with a Bristol Pegasus and called the Baffin. Had the leisurely peacetime pace continued, doubtless the Fleet Air Arm set-up would have sufficed for the Navy. But with the rise of Mussolini and Hitler in the early and mid-thirties, the fears of the Admiralty, that the RAF would be more concerned with itself and its own needs, were to a disquieting extent realised.

Already a streamlining of naval aircraft was envisaged by combining the FSR and TBR roles into one, designated TSR (Torpedo-Spotter-Reconnaissance), and two new biplanes were ordered to fulfil this task. They emerged as the Blackburn Shark and the Fairey Swordfish. Of the two the former had a higher performance but it was soon relegated to the training role and the latter became the backbone of the Fleet Air Arm for the next and most vital decade of the service.

With the panic expansion of the armed

services in the late 'thirties, the Fleet Air Arm certainly suffered. One new carrier appeared, the HMS Ark Royal, a new fighter was ordered, but it was still a biplane and an adaptation of a RAF aircraft the Gloster Gladiator, and a monoplane dive-bomber, the Blackburn Skua; both these types only entered service months before the outbreak of the Second World War, by which time two other new aeroplanes were ordered — the Blackburn Roc, a fighter version of the Skua with a four-gun Boulton Paul turret aft; and the Fairey Albacore, a modernised Swordfish with all 'mod-cons'. The other significant aircraft which joined the Fleet during those years was another biplane, built to a prehistoric concept but which, like the Swordfish, proved to be a remarkably apt aircraft for many wartime duties; this was Supermarine's Walrus amphibian, affectionately dubbed the 'Shagbat' in the Navy.

All through the 'twenties and 'thirties the Navy had never given up its efforts to regain control of the maritime aircraft. Eventually, when it was seen that the Navy was being neglected under the current set-up, the Inskip Committee was inaugurated in 1935 to look into matters. Its findings, which were adopted, were that the Coastal Command of

the RAF, the old flying-boat squadrons of the RNAS brought up-to-date, were to remain with the RAF, but the Fleet Air Arm was to be removed from the RAF and put under the control of the Royal Navy.

So Their Lordships of the Admiralty had substantially won the day — but at what a time. With but a few months to the outbreak of the Second World War they now had the immense task of building up an entire organisation to run what was now designated the Air Branch of the Royal Navy, but still popularly the Fleet Air Arm, into a force to cope with an enemy immeasurably tougher than in the First World War.

The Navy threw itself into the task with a will; it had acquired four airfields from the RAF (Donibristle, Gosport, Lee-on-Solent and Worthy Down), and others came within its realm, many of them in outlandish places. It hastily worked on such new types of aircraft as it had and ordered how and when it could. To man them and service them many more seamen and officers of many trades were called upon. And when September 3 1939 ushered in a new World War the Air Branch of the Royal Navy had established itself as an operational force, ill-equipped though it was. □



## in the field

Terry Gander and Chris Foss

### Fort Widley military vehicle rally



**Above** a magnificent Zundapp combination. **Below left** Dodge 4x4 ambulance. **Bottom left** Dodge 4x4 1/2-ton truck. **Below right** Windsor Carrier in action during towing operations. **Bottom right** truck, 1/4-ton, 4x4, amphibian (Ford GPA).



FORT WIDLEY is one of the forts built during the 1860s and 1870s to protect the Portsmouth fleet facilities from possible land attack from the direction of Southampton or Winchester. As far as can be discovered its formidable armament never fired a shot in anger and until recently it was allowed to fall into decay and had no other armament than a derelict 3.7-inch AA gun.

A few years ago the fort was taken over by the Portsmouth Corporation for conversion to a museum, both on the fortress system and also as a D-Day memorial, for it was from under Fort Widley that the invasion orders were given.

In keeping with this latter event, the fort was the venue for a military vehicle rally on September 8. We missed the Winfield Rally the week before due to a clash with Farnborough Press Day, so we were glad to take the opportunity to be back among the four-wheel-drive men.

Unfortunately, the weather that had nearly ruined the Farnborough event nearly wrecked this one. It had been hoped that many vehicles from the Continent would join the rally but the bad weather prevented many from making the rough ferry crossings and most of the vehicles on show were old friends from previous events.

About 40 vehicles were on show with the accent on American vehicles. These American vehicles usually had their crews bedecked in the appropriate vintage American uniforms and a great deal of trouble had obviously been taken to ensure authenticity both in the gear and the vehicles. Still, we couldn't quite get used to an American Army major with a Liverpool accent.

Most of the American vehicles were the





familiar Dodge 4x4 weapon carriers and 6x4 trucks, with the usual flurry of jeeps in varying condition and colour schemes. Prominent among the US contingent was a well-looked-after DUKW complete with Browning .50 machine-gun.

The British contingent was overshadowed by the bulk of a superb Scammell wrecker, and in the place of the jeep a nice trio of carefully turned-out Dingo scout cars gave the big stuff some backing. One very unusual item was a beautiful Windsor Carrier which had a fair bit of work to do dragging other vehicles out of the rather soggy ground. This Carrier was as complete a restoration as is ever likely to be seen on this kind of vehicle and was complete with the correct covers and many of the outside extras. The driver was kitted out in authentic battledress and even a dummy Bren gun was in place to round off the job.

Despite the rather small turn-out we enjoyed the rally, mainly because of the enthusiasm of the people who look after these wonderful old military bangers. The work and effort put into keeping these vehicles on the road is considerable and costly but we hope they will keep it up and continue to hold these events whenever possible. Let us hope that next time Fort Widley opens its gates to an event of this sort, the foul weather of the previous week will be just another bad memory and that many more vehicles will be able to attend.

**Top left** tractor, 6x4, heavy artillery (Scammell Pioneer R100). **Left** DUKW. **Below left** a brace of Harley-Davidsons. **Bottom left** arrival of a Dingo. **Below** truck, 12-ton, 6x4, prime mover, M20 (Diamond T 980). **Bottom** Bedford 30-cwt 4x2.



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George Gush

# renaissance warfare

## Part 18 — Persians and other easterners

### Persians

UPPER-CLASS Persians were scarcely ever seen on foot, so it is hardly surprising that their army was based upon the mailed cavalryman, armed with light lance, composite bow and sword. References to 'Curats of shelles' suggest possibly scale armour too, and, like Indians, Persians could wear the 'coat of a thousand eyes', a padded velvet garment covered with metal studs. Mail was supplemented with plate defences — a corselet, the 'Char Aina' (Four Mirrors), arm-protection called 'Bazuband' — mail mitten, splinted armour round wrist and plate vambrace — and plate knee and foot defences. Round shields with four bosses, 24 to 30 inches in diameter and made of steel or hardened leather, were also carried. Additional weapons included maces, and a pair of short steel javelins carried in a case. The horses could have leather or metal protection, usually covered by decorated cloth barding.

These cavalry, very like Turkish Spahis, though described as better-armed and better mounted (on 'big, brave horses'), were, during the 16th Century, raised in the same way, by the grant of small fiefs in return for military service, mainly from the religio-mili-

tary order of the 'Quizilbashes' of which the Safavid 'King of Kings' was the head.

There were also light horse-archers, probably representing slaves and servants as well as mercenary Kurds, Tartars or Georgians, but they seem to have been less numerous than the 'heavies', who could make up some 60 per cent of a Persian army.

About one-third of Persian armies consisted of infantry, but in the 16th Century these seem to have been mainly poor-quality levies, often of subject races. Notable among the latter were the Armenians, who wore long Turkish-style robes, and blue turbans 'mixed with red and white'. Armed chiefly with the bow, they protected themselves against cavalry with 'a long row of darts' (javelins) fixed in the ground.

Probably because of relative lack of discipline, effective infantry, and firearms, Persian enveloping tactics proved unsuccessful against the Turks in the 16th Century, but the great Shah Abbas (1587-1629) reversed this situation and regained Persia's lost territory. Apart from the decline of Turkey, his success rested on his reorganisation of the Persian forces.

Firstly, he caught up with the Turks by

**Key to drawings** a Persian light cavalryman, 17th Century (could be Turcoman, Tartar or similar). Shows shape of usual quiver. This one has green cap, trimmed with brown fur; scarlet coat with gold frogging; green sash; black boots (note high heels which seem to be usual with Persian horsemen). Harness red with gilt fittings. Saddle cloth green with red fringe and decoration. Quiver black with gold patterns and purple edge. Girth yellow. b Persian 16th Century trumpeter. Wears a common Persian white turban, with one red and two grey plumes, plus decorated clothing which was not exclusive to musicians. The trumpet could also have a sharp 'step' in the middle. A kettle-drummer would be similar. c Persian 'halberdier', 17th Century. He might well be some kind of guardsman. He has a felt hat and carries an axe of very characteristic shape. Hat red, crown grey, plumes black; black and white shirt; purple coat with black frogging; tight green trousers; white 'socks'; brown shoes; red sash. d Persian artillery, early 17th Century. Gun looks rather primitive, but this may be due to the original eastern artist. The pioneer is of interest with his typical felt hat and

'entrenching tool'. The other gunner wears a type of legging which could replace 'puttees' on other Persian foot. e and f Persian musketeers, 17th Century. Felt hats again of types often worn by Persian foot throughout our period, as are the grey-white 'puttees', white socks and black shoes. Persian musketeers replaced the bandolier of Westerners with the envelope-shaped pouches shown. Musketeer on left (e) has black hat, crimson coat, red and silver waist sash, grey breeches, red strip at top of 'puttees', black powder horn on gold cord, black scabbards with gilt fittings, and gilt buttons. Royal Guard on right (f) has grey-brown hat with crimson binding and yellow feathers in gilt holder; light green coat, crimson shirt, and scarlet trousers. Trim on upper jacket is brown with red edges (could be fur). Gun may be flintlock as Shah Abbas had some 'fusiliers'. Other colours as for 'e'. g Persian musketeer, late 16th or early 17th Century. Elaborate turban. Sabre slung very high from shoulder belt, with one strap at front and rear. Usual 'envelope' pouch below powder horn. Stripes on musket butt, which are white, seem to be characteristic of Persians. h

establishing a body of artillery — the 'topchis' — equipped with 500 Persian-cast brass cannon, and a force of 6,000 disciplined 'Tufangchis' or musketeers, drawn from Georgian and Armenian converts, equipped with muskets rather longer than European ones, and probably trained by Europeans including the English Sir Robert Sherley. (Firearms had been introduced to Persia in the late 15th Century by the Turkoman 'People of the White Sheep' and the first crude cannon cast, but as late as the 1570s the Shah was said to have 'No great ordinance or gunnes or harquebusses'.)

The cavalry, who remained the chief force, were also strengthened. Even at the beginning of our period there had been a standing Royal bodyguard of 500 men, but Shah Abbas got rid of half the 60,000 feudal 'Quizilbashes', replacing them not only with his pseudo-Janissary infantry, but also with a paid regular corps of 10,000 'Qullar' or 'slaves'. They were probably so-called because mainly drawn from Christians of the Caucasus, from whom Persian slaves also came, but some of them may have actually been captured or purchased slaves. To overcome the divisive effects of tribal loyalties, Shah Abbas is said to have founded a special tribe of 'King's Friends' made up of those who joined his service, but this appears to have been a later development.

### Mamelukes

A 'mamluk' was a white slave, purchased or captured, and employed as a soldier. There had been mamluks in Moslem Spain, but by our period they existed only in Egypt and Syria, where they had become a military ruling caste. They were probably the finest exponents of the lance and bow tactics of the Eastern mailed cavalryman, though they had an aristocratic preference for the shock

Persian cavalryman, 16th Century. Likely to have full mail under his long kaftan, though only vambraces show. He is using a short javelin, the case for which can be seen beneath his quiver. His Scottish-looking headgear may be associated with the Quizilbashes, as it is often seen on the Shahs of this period and their followers. It consists of a red turban (purple for Shah Abbas) with a protruding piece and plume, and a white cloth with red lines, tied tightly round it. The large saddle cloth, round saddle flap and two cords across horse's chest are typical. He would also carry light lance and shield, and could have helmet and aventail like 'i'. i Persian cavalryman with typical spiked helmet with two plumes and adjustable nasal plus mail aventail, cut in points at bottom. He (rather unusually) wears his mail uncovered, allowing us to see the 'Char Aina'. His mail leggings with knee and foot protections are also unusual, though authentic. He carries light lance, sabre, bow in case, quiver on other side, mace at his saddlebow, and typical convex shield with pronounced rim and four bosses. Horse bard covered with cloth; plate head defence.





weapon, and their armies were even more cavalry-orientated than those of Turkey and Persia. The Mamelukes were armed and equipped like the Turkish and Persian heavy cavalry, though according to Oman given to wearing very large turbans (decorated with ostrich plumes for the leaders) in place of helmets. Their mail was often converted into a sort of brigantine by the addition of rich cloth coverings inside and out.

They were commanded by 'Amirs of a Thousand' which probably gives an indication of their organisation. If this followed that of the mamluks of Moorish Spain, 'regiments' of 1,000 would be subdivided into five companies, each of five 40-man troops. An elite was provided by the 'Royal Mamelukes' of the Sultan's guard (also those of the previous Sultan, who would remain together as a separate unit).

The Mamelukes themselves were supported by 'Korsans' — Abyssinian and other mercenaries, similarly equipped but presumably of lesser quality — and some Arab light cavalry. These latter, if equipped like their compatriots across the Red Sea,

would have a 15-foot cane lance, a small round hide shield, javelin, and a sling kept wound turbanwise round the head.

The Mamelukes actually had artillery before the Turks did, in the 14th Century, but, like European chivalry, regarded firearms as a challenge to their traditional military skills and the social order based on them, so reserved cannon for the attack and defence of forts. However, in their wars with the Turks in the early 16th Century they brought numerous cannon into the field at al-Raydaniya (1517). Being of immobile type, these were used to defend a field-work and proved ineffective. By this time small firearms had also appeared, but were confined to low-status infantry (sometimes camel-borne) and negro slave soldiers. In 1510 the first complete arquebus-armed unit (at-tabaga al-Khamisia) was formed, but this 'patched-up army' was a badly-paid mixed bag of Turkomans, Persians, etc, used mainly for garrison and marine duties. Under their last Sultan, Tumanbey, a late attempt to get some mobile firepower was the mounting of arquebusiers and light artill-

ery in ox-carts, and the production of camel-guns (heavy arquebuses fired from the unfortunate beasts' humps).

The Mamelukes were defeated by the Turks in 1516-17, and did not regain their independence from the Ottoman Empire until after the close of our period.

### Tartars

These descendants of the dreaded Mongol hordes retained their forbears' methods of warfare, with much of their organisation and ferocity, but their lack of unity, and the improved organisation and weaponry of their settled neighbours, made them no longer the terror they had once been. Nonetheless they were still given to slave-raiding forays against their Russian and Polish neighbours, and though most often allied with their Turkish co-religionists they could also be found allied with Cossacks, Muscovites and Poles and fought against all these and the Turks too.

The Tartar armies, at least in Western Asia, were entirely cavalry, except that the largest khanate, that of the Crim Tartars in the Crimea, could call upon 800 musketeers from the Volga Germans when required.

Tartar dress was most often of black sheepskin (wool outward), with hats of the same, or shirts and ankle-length kaftans like the Russians, but buttoned on the left instead of the right, probably with linen breeches and half calf length red or yellow boots. However, they were anything but uniform in dress (save in general grubbiness, if European witnesses are to be believed!). Though fur-trimmed hats were common, many wore white cotton turbans, and indeed officers and leaders usually imitated Turkish dress, often including helmet and mail of Turkish, Persian, or Indian make. The protection of their followers, however, was usually limited to a round or semi-rectangular shield.

They were horse-archers first and foremost, all carrying the composite bow. By no means all had sabres; other weapons included lassoes, and spears like European boar-spears; a very few had pistols, but in general they lacked firearms, even in the 17th Century.

In tactics they were 'irregulars', using deep but loose formations, and relying on mobility and envelopment, their horsemanship allowing them to fire accurately when fleeing, or when galloping in circles, a tactic often adopted. Like Red Indians they would sometimes evade return fire by hanging down the side of their mounts by one hand and one leg!

However, their armies were far from disorganised mobs. The full army or 'orda' was divided into corps of several thousand, known as 'Czawul', which in turn were sub-divided into groups of 20 standards (a total of 800 men). An Aga commanded the Czawul, a Bey the smaller group, and the different sections of the army were kept in

Persians, early 16th Century. The tall pointed helmets were later supplanted by the type shown on drawing 'i' on previous page (British Museum).



communication by despatch riders and directed by pipe and horn signals, each officer being accompanied by a piper. The traditional horsetail standards were also used for signalling orders, and the Tartars are said to have kept very good order so long as their unit commanders survived.

### Wallachians etc

After the battle of Mohacs (1526), most of Hungary fell into Turkish hands, but Transylvania, Moldavia and Wallachia (today making up Roumania) were left as semi-independent states in a 'no-man's-land' between Turks, Poles and Austrians. Wallachia was generally a Turkish satellite, but 20 standards of Wallachians served in the Polish forces, and their princes or Voivodes some-

**Key to drawings** 'j', 'o' and 'p' are Tartars, 'p' has a turban, probably white, and carries a spear and broad sabre (note suspension cords, usual for easterners). The flag is from a contemporary print, though Tartars normally used horsetails. 'o' is probably a chief (note long plaits) and wears a fur-trimmed hat. His long kaftan has its skirts tucked back, showing tight hose and boots. He has a horseman's war hammer and a Turkish-type shield (note ring and cord for slinging it on back). 'j' has a sheepskin cap and another sheepskin tucked through his sash, plus sheepskin boots. Horsetail seems to be pushed through a sort of 'woggle' but may be knotted. 'k' and 'l' are Mamelukes, based on later drawings but probably giving a fair idea of them during our period. 'l' has blue and white clothing, yellow shoes and red and white sash. His brown beehive-cum-coconut hat may be rawhide, and was also worn by Moors and Stradiots. Plumes white. 'k' is dressed in white with a red cap in his turban and red stripes on cloth trapper on horse's hindquarters. The lance pennon is blue with a white crescent. Both 'k' and 'l' have Turkish-style shields of the near-rectangular type, and are likely to have worn mail under their outer clothing. 'm' Transylvanian/Roumanian peasant infantryman, early 17th Century. Cap is probably sheepskin, cloak could be fur. Note sandals and binding round ankles. 'n' Arab light horseman from a 17th Century picture, but could be 16th Century too as costume did not change in the east as quickly as in the west. The rather peculiar headdress or hood is black, robe black and white, harness and breast-strap brown leather, fringe on lance red.





**Left** Shah Abbas' own helmet — typical of Persian 16th Century and later helmets. Note spike, two plume holders, adjustable nasal and mail aventail cut in points. **Right** Persian Bazabund or arm protection. Shah Abbas' period, possibly even his! Note mail 'mitten' and splinted armour for wrist (British Museum). **Centre right** Mameluke shield. **Far right** 15th Century Mameluke helmet, designed to be worn over a turban (Tower of London Armouries).

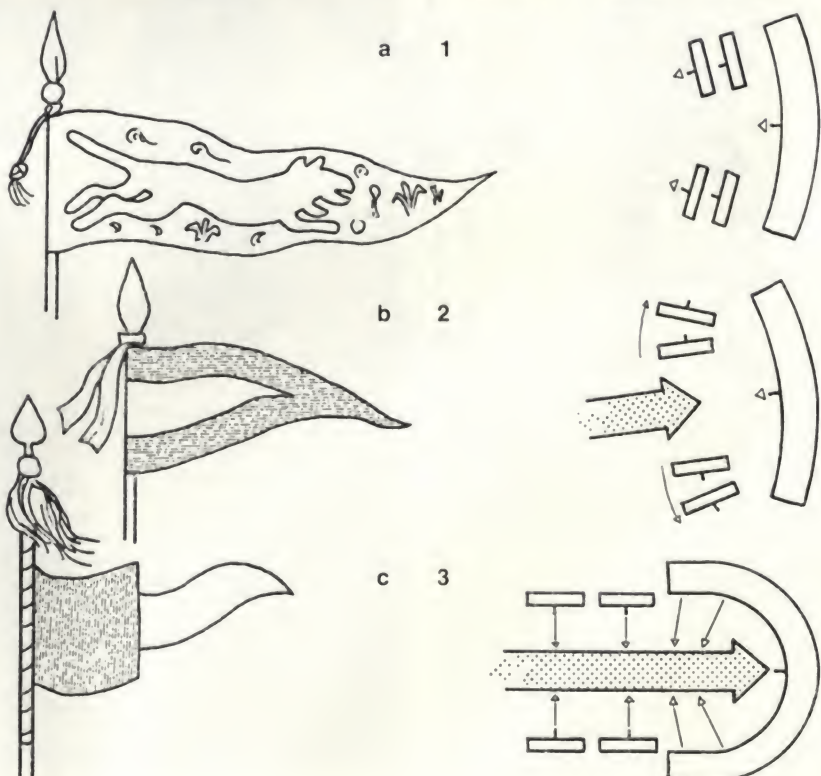


times fought the Turks — Michael the Brave winning a notable victory over them at Calugareni (1595). Wallachian armies of this period were entirely of cavalry, mainly nobles, lightly equipped, with spear, shield, sabre and often bow, occasionally replaced with pistols. A Polish source says they were very brave, but great looters!

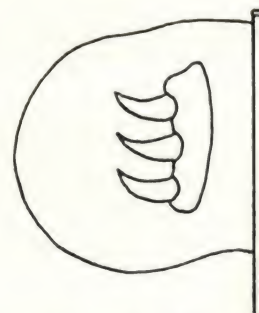
At Calugareni the Wallachians had the aid of Cossack and Transylvanian contingents, and Christopher Lee fans in the wargames fraternity might fancy having a Transylvanian army! The Princes of Transylvania fought for and against most of their neighbours at one time or another and were involved in the early stages of the 30 Years'

**Persian flags** (horsetails also used). **a** is purple with gold 'lion' and foliage (early 17th Century). **b** many possible patterns including green with gold centre or purple with silver centre. Gilt ribbon. Mid-17th Century. **c** 15th Century. Colours include green/red, blue/red, blue/yellow. Stripes on staff red or blue and white.

**Tartar tactics** 1 main Orda at rear, four Czawuls out in front. 2 enemy attack, Czawuls give way, wheeling to flanks. 3 enemy penetrates, centre gives way, wings encircle enemy, advance Czawuls return to attack enemy flanks and rear (Roman Olejniczak).



AIRFIX magazine



Transylvanian standard. This device was used by Stephen Bathory (who became King of Hungary). It looks like a vampire's false teeth to me — does any reader know what it is? Colour of device was white on blue ground.

War. Unusually for the area, the Transylvanian nobility got on fairly well with the peasantry (apart from Count Dracula, I presume) so that their army included infantry as well as the traditional levy of mobile cavalry. After 1606, the Princes established landless wanderers — 'Haiduks' — on holdings along the Turkish frontier, on military service terms like the Austrian 'Grenzers'.

By the 30 Years' War, Bethlen Gabor had a small standing army of infantry with firearms (and possibly pikemen also). Cavalry would probably have included mailed lancers and light horse-archers, but apparently not the plate-armoured men-at-arms who had formed the spearhead of the old Hungarian army, up to Mohacs.

Hungarian costumes of the period have been illustrated in earlier articles (Imperialists — October 1974, Poles — June 1974) and those in the Polish army were actually Transylvanians, introduced by Stephen Bathory, Voivode in 1571, who got himself elected king of Poland. By the early 17th Century, Hungarians already used red, white and green flags, but I don't know of what pattern.

## Figures, etc

Warrior Spahis are just right for Persian cavalry (perhaps with modified helmet-plumes). For Tartars, one could use Warrior Akinjis, Miniature Figurines' Mongols, and Huns by both these makers and Hinchcliffe. Some of the Minifigs' Poles could serve as Balkan infantry. Among the Airfix figures, the Arabs are a good source for not only Mameluke auxiliaries but general Eastern cavalry; Persian-style helmets can be sliced off the First World War Germans, and a scrap of tissue makes a convincing Persian-style mail aventail. The Red Indians might provide a source of Tartars, who were often half-naked and rode similar small ponies. The top half of a Bowman could be used to give a shooting horse-archer, but he would need a haircut, as only Tartar leaders had long hair, the rest usually shaving their heads. Plasticine covered with banana oil or clear dope will provide fur caps.

I would like to acknowledge with thanks the assistance of Roman Olejniczak in the preparation of part of this article. □

November 1974



news  
from  
AIRFIX

- 1 American soldier
- 2 Douglas DC-9-30
- 3 Japanese tank

The fine details of the musket, water bottle, ammunition pouch, back pack and uniform have all been authentically reproduced in this 21-part kit, which measures approximately 2½ inches high when assembled. Price is 23p.

These soldiers, who fought under the command of George Washington, wore many variations of uniform and although he tried to achieve some uniformity of style by issuing dress regulation orders, due to desperate shortages, he never succeeded in this aim and both uniform and equipment continued to vary among Washington's troops. There is thus plenty of scope for conversion enthusiasts and diorama modellers.

## 2

THE McDONNELL Douglas DC-9-30, the best selling twin-jet, short-haul airliner in production today, is the latest addition to the 1:144 scale Skyking Series. The 58-part kit measures 10 inches long with a wing-span of 7¾ inches, when completed, and the

Continued on page 174



Airfix's new American Revolutionary soldier in one of the five different configurations provided in the kit.



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# NEW FROM ARMS AND ARMOUR PRESS

## German Armoured Cars of World War Two



## GERMAN ARMoured CARS

John Milsom and Peter Chamberlain

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To remedy the previous lack of adequate photographic coverage of German armoured vehicles, *German Armoured Cars of World War Two* contains over two hundred illustrations (the majority of which have never before been published) showing several views of each vehicle — an invaluable aid to students and modellers alike. Four-, six-, and eight-wheeled vehicles are illustrated and described in detail, with expansive coverage of their technical characteristics, including armour, armament, engines, suspension, performance and dimensions.

128 pages; 227 illustrations; 10 in x 7 1/4 in (252 mm x 187 mm); fully bound; £3.50 (+25p P & P)

## armour camouflage & markings NORTH AFRICA 1940-1943

Over 100 superb colour profiles and views of tanks, and 90 monochrome photographs, illustrate this detailed reference work. Described and pictured are the camouflage and markings of the armoured vehicles that fought in North Africa from the first Italian campaigns and the German advance on El Alamein to the final Allied victories which drove the Axis forces into the sea. The contents are: Comparative Colour Swatches; Italian Camouflage and Markings, 1940/3; Italian Armour Markings, 1940/3; British Camouflage and Markings, 1940/3; British Armour Markings, 1940/3; The Birth of the German Afrika Korps; German Camouflage and Markings, 1941/3; German Armour Markings, 1941/3; American Armour Markings, 1942/3; American Armour Camouflage, 1942/3. George Bradford is Director of the AFV Association and editor of its journal. SBN 85368 209 7; 96 pages; 100 colour drawings; over 90 photographs; 7 1/2" x 9 3/4" (190 mm x 250 mm) landscape; fully bound; £2.60 (+15p P & P)

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Above the DC-9. Foot of page Chi-Ha tank.

#### Continued from page 171

pack contains illustrated assembly instructions together with a painting guide and decals for an airliner in service with KLM.

The two rear-mounted Pratt & Whitney engines are accurately reproduced and the aircraft can be assembled with the undercarriage in either the retracted or lowered position. The attractive, full-colour box top depicts the airliner in its distinctive two-tone blue livery. Price is 42p.

The first flight of the DC-9-30 was on August 1 1966 and almost 500 have been built since. It is a development of the DC-9-10, the DC-9-30 having an increase of 15 feet in fuselage length, modified wing flap and slat arrangement and an increase in operating weights.

The airliner has a cruising speed of 497 knots at 25,000 feet, an economical cruise range of 1,370 nautical miles and a maximum take-off weight of 108,000 lb. It is powered by two 14,500 lb thrust Pratt & Whitney JT8D-9 engines and measures 119 feet 4 inches long and 27 feet 5 inches high with a wingspan of 93 feet 4 inches. KLM operates 37 DC-9-30s on the airline's Euro-

pean route network.

**3** IN WIDESPREAD service in China and the Pacific during the Second World War, the Japanese Chi-Ha tank is now the subject of a kit in the Airfix 1:76 scale military vehicles series.

This 68-part kit contains a wealth of beautifully reproduced detail, with louvred engine covers, guns and exhaust boxes authentically modelled and special features including a rotating turret and elevating gun. The tank depicted in this kit is that of a commanding officer, distinguishable by the radio aerial which encircles the turret top.

The kit, which measures approximately three inches long when assembled, is moulded in green polystyrene and decals and painting instructions are provided for a machine in action in Malaya in 1942. Price is 23p.

The Chi-Ha, or Type 97 Medium, was the main battle tank of the Imperial Japanese Army during the Second World War but its inadequate armour protection and the low velocity of its 57 mm gun made it no match when up against Allied tanks.



THE BRISTOL TYPE 138A was designed to meet Air Ministry Specification 2/34 of 1934 for a high altitude research aircraft capable of reaching 50,000 feet or over.

It was to be used mainly as a flying laboratory to gain experience in the operation of aircraft and the working of engines, equipment and instruments in the tenuous atmosphere and low temperatures of high altitudes.

Within 12 months this aircraft, flown by RAF pilots, had twice gained the World Height Record, a unique achievement in the fact that both airframe and engine were the products of one firm, the Bristol Aeroplane Company of Filton.

Simplicity of design and wooden construction were decided on at the outset in order to keep the aircraft as light as possible, and the fact that a plywood skin would have better insulating properties than thin sheet metal.

The 138A was a low-wing cantilever monoplane and for its period was the largest single-seat aircraft in the world, with a span of 66 feet. Allowance also had to be made for conversion to a two-seater, with the observer as near the centre of gravity as possible.

The high aspect ratio wing was in three sections, built up of three main spars with mahogany flanges and plywood webs covered with a stressed-skin of plywood only 0.8mm thick in some parts. The two outer wing sections, which tapered in both thickness and plan form, were bolted to the centre section. A pair of special 'surface' engine-oil coolers were designed to form the leading edge of the centre section on either side of the fuselage. A scavenge pump forced the oil through the twin coolers on its way back from the oil tank.

The rectangular fuselage, of monocoque construction, was covered with a plywood skin, glued and screwed through the mahogany corner longitudinals and stiffener struts. The front part consisted of a fireproof bay with two bulkheads containing the engine mounting and two fuel tanks. Fuel was fed from the main lower tank with a capacity of 170 Imperial gallons by a pump driven from the engine to the upper gravity tank of 12 Imperial gallons.

A conventional tail-skid and divided fixed undercarriage were fitted. Although a retractable undercarriage was available at this period it would have added considerable weight to the aircraft. The undercarriage fitted consisted of two vee struts attached to the extremities of the centre section and two upward bent axles, the inner ends of which were hinged to the centre-line of the underside of the fuselage. The wheels and brakes were supplied by Dunlop.

The power unit selected was a special version, known as the PE VIS, of the 'Pegasus' series of nine-cylinder radial engines introduced in 1932 as a successor to the famous 'Jupiter'. Fitted with a two-stage supercharger and enclosed in a low-drag cowl, it drove a four-bladed, fixed pitch wooden airscrew through reduction gearing.

From data supplied by the company, the  
*AIRFIX* magazine

## Experimental and prototype aircraft

Number 2 in this occasional series by  
**Colin Ashford: the Bristol 138A**

standard series VI in service was introduced in 1935 and type tested at 840 hp at the relatively high crankshaft speed of 2,425 rpm. The second-stage supercharger with inter-cooler was developed, and in the 138A was positioned beneath the engine; clutched in by the pilot at a height approaching 40,000 feet, it enabled the engine to develop maximum rpm at 42,000 feet.

The capabilities of the new 'Pegasus' had been well demonstrated in September 1932,

when Captain C. F. Uwins, the Bristol company's chief test pilot, set up a new world altitude record of 43,976 feet with a Vickers 'Vespa' biplane.

All the metal parts in the front of the fuselage, including the engine and its mounting, were electrically bonded together and connected to the tail, to reduce any troubles which may have arisen from the accumulation of electrostatic charges at high altitude.



Detail shot of pilot in 'diving suit' entering cockpit of Bristol 138A, Farnborough 1937 (Flight).

The cockpit, aft of the rear wing spar, was exceptionally roomy for a single-engined aircraft, well insulated, and warmed by air flowing past the lubricating-oil coolers in the wing. It had a transparent, sliding hood which could be released instantaneously in case of emergency.

All controls were fitted with ball bearings. The joints and bearings, after being dipped in thin gun oil and drained off, were locked in sealed compartments to overcome the danger of ordinary lubricating grease freezing up in very low temperatures.

Instead of the cockpit being pressurised, the pilot wore a suit made of rubberised fabric resembling a deep-sea diver's, and a headpiece with a curved double window. Oxygen was injected into one side of the helmet, and the pilot's exhaled breath passed out on the opposite side. Carbon dioxide and moisture were removed from this 'exhaust gas' by a chemical process, and

Left Bristol 138A in flight (Neville Franklin). Below note pilot's ladder (BAC).







View from other side of fuselage (Neville Franklin). Foot of page underside view in flight (Flight). Frog used to make a 1:72 scale kit of the 138A, now unfortunately very rare.

pure oxygen recirculated through the system. Clad in this manner, the pilot was able to remain aloft at altitudes of around 50,000 feet for about two hours. A sealed baro-thermograph in the cockpit made a continuous record of atmospheric pressure and temperature on a sheet of smoked metal mounted on a rotating drum.

Both fin and tailplane were covered with a plywood skin, the rudder and elevators being fabric covered over a wooden framework.

The 138A was given the serial number K4879 and painted silver overall except for a blue-black anti-dazzle decking on top of the fuselage extending from the cowling to the rear of the cockpit. The upper wing surfaces were also painted blue-black to reduce glare, and red, white and blue roundels were carried on both upper and lower wing surfaces, and on either side of the fuselage as on service aircraft.

Piloted by Captain Uwins, the 138A made its first flight on May 11 1936, from Filton. On September 28 1936, flown by Squadron Leader F. R. D. Swain RAF, a height of 49,967 feet was reached, gaining the World Altitude Record for heavier-than-air aircraft.

The previous record of 48,698 feet had been set up by the French pilot G. Detré, flying a Potez. Squadron Leader Swain took off on his historic flight from Farnborough and landed at RAF Netheravon.

In May 1937 an Italian pilot, Lieutenant-Colonel Marrio Pezzi, raised the height to 53,937 feet, but the Italian claim had not received formal acceptance by the International Federation when the 138A made another attempt with Flight Lieutenant M. J. Adam RAF at the controls.

The designed ceiling of the Bristol Monoplane was 54,000 feet, which it was expected to reach in approximately 88 minutes, and minor modifications were made to prepare it for the second attempt. Smaller wheels were fitted to reduce weight and drag, and the brakes removed; modifications were made in carburation and the airscrew replaced by one of finer pitch. The power unit was also overhauled and reconditioned.

During the month of June 1937 a number of trial ascents were made, on each of which the aircraft climbed to approximately 50,000 feet.

On June 30, again flying from the Royal

Aircraft Establishment at Farnborough, Flight Lieutenant Adam succeeded in reaching the record height of 53,937 feet, and was in the air for two and a quarter hours.

Due to the fact that unbroken cloudbanks blotted out his view of the earth and obscured most of the landmarks by which he might have checked his position, Adam's achievement was all the more outstanding. This fact was acknowledged by the Air Ministry whose official account of the flight contained these words: 'High praise is due to the pilot for the sustained flying effort which has enabled the existing record to be broken by a substantial margin.'

The ascent took an hour and 35 minutes, and the second supercharger was switched on at 35,000 feet. At 38,000 feet frost began to form on the interior of the cockpit and windscreen, and when the altimeter was registering 55,000 feet the rate of climb had decreased to zero. At altitude there was a loud report and the cockpit canopy cracked, but Flight Lieutenant Adam escaped injury because of his pressure suit.

Confident that he had increased the record height by a substantial margin he closed the throttle and made his long gliding descent, landing at Farnborough with the engine still switched off.

Following its period of usefulness as a research aircraft the 138A was subsequently re-registered 2393M and relegated to ground instructional purposes. Up until 1921 such aircraft had retained their original service number, but from 1921 such airframes were allotted an RAF number in numerical sequence with the letter 'M' as a suffix to denote the 'Maintenance Series'.

There is no official record of the ultimate fate of the 138A in the Ministry of Defence (Air Force Branch), or in RAF Maintenance Command. RAF Technical Training Command can trace the airframe to No 10 School of Technical Training at Kirkham, Lancs, on May 31 1941. When Kirkham closed down, the airframe was probably transferred to No 8 School of Technical Training at Weeton, near Preston, but there is no record of what became of it; Technical Training Command suggest it may have been broken up (as it was of wood) and burned.

Continued on page 178

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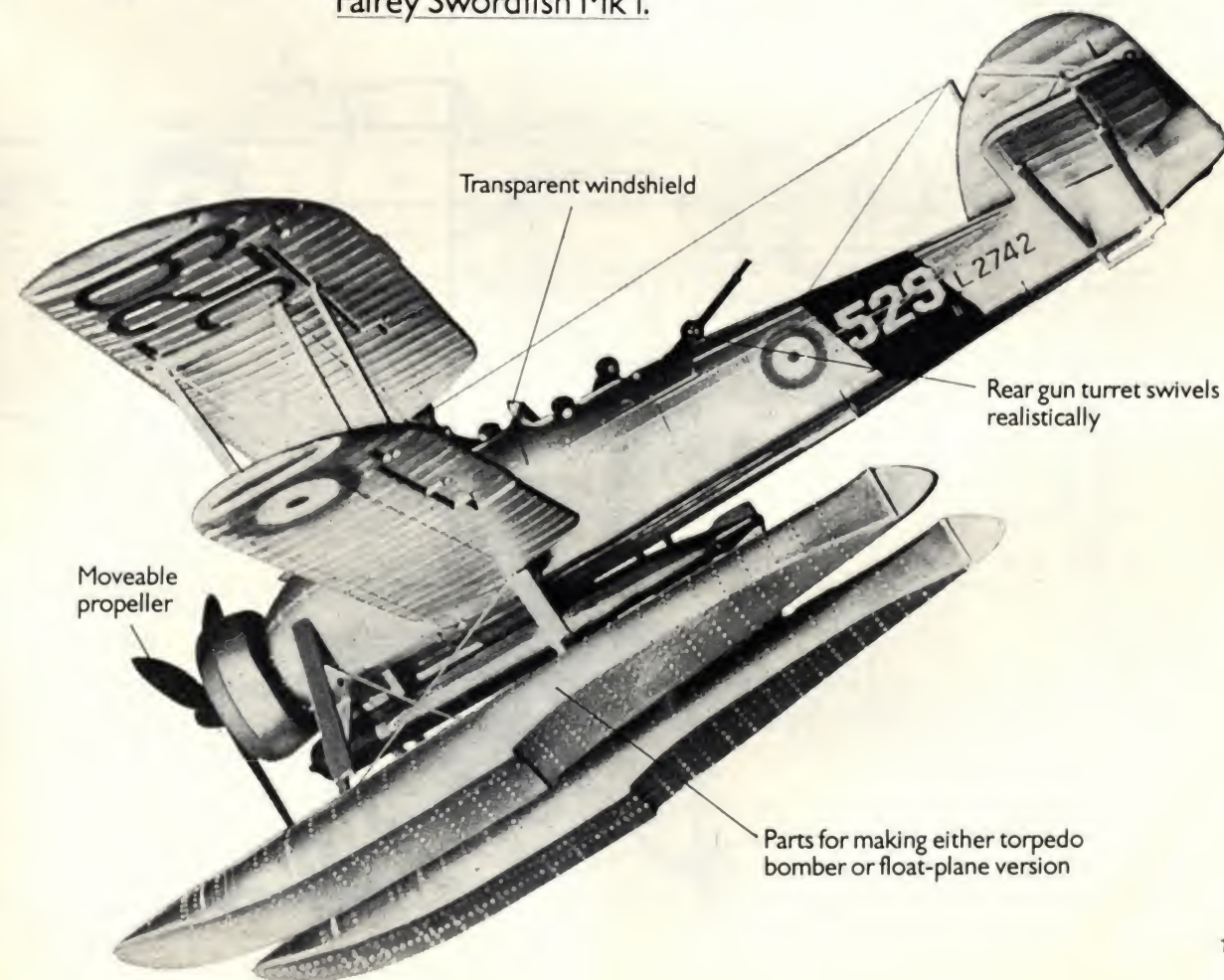
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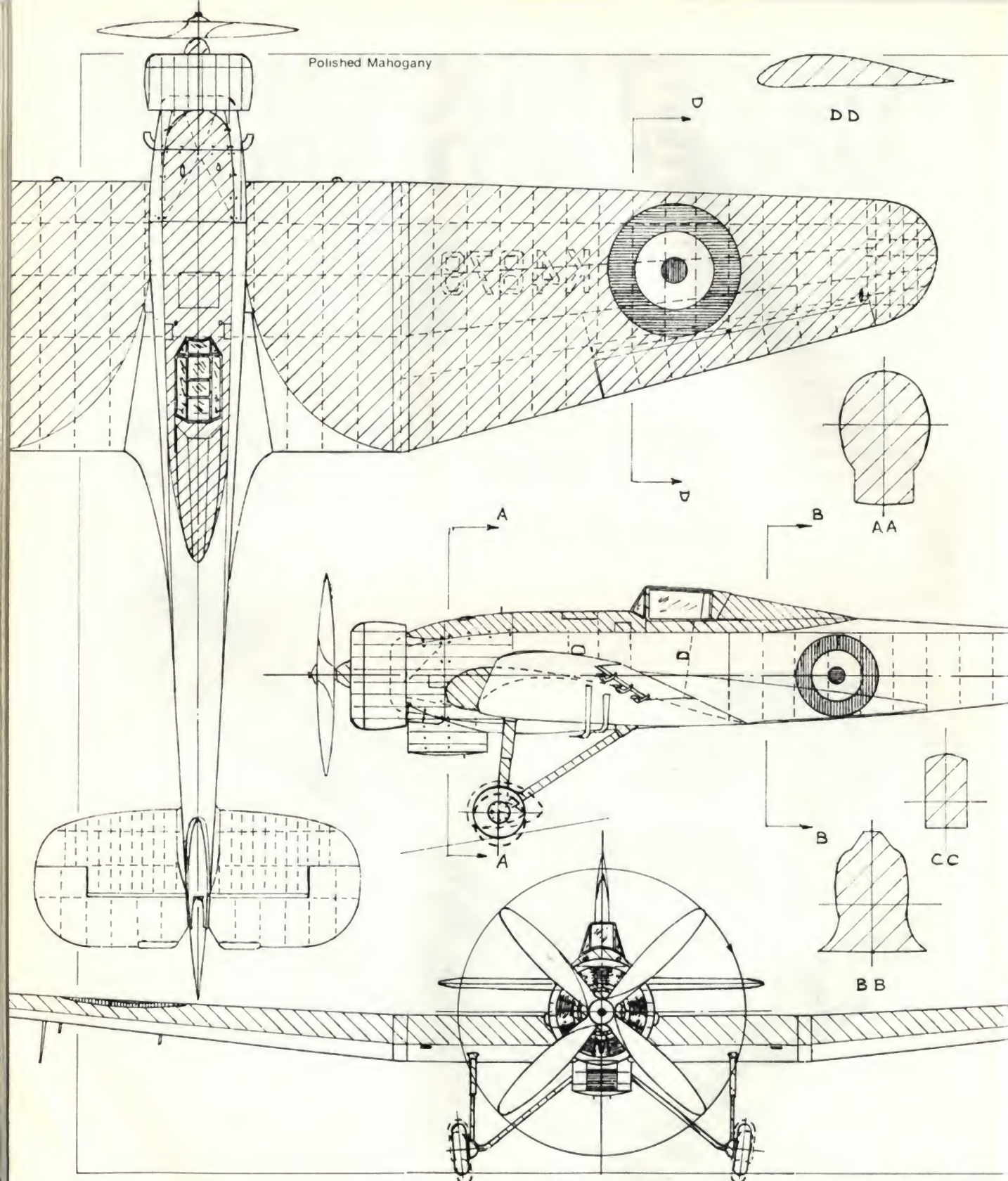
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## Fairey Swordfish Mk 1.







# Specification and data

**Description** Single-seat high altitude research aircraft. Wooden construction. Maker's designation Type 138A.

**Manufacturers** Bristol Aeroplane Co Ltd, Filton, Bristol.

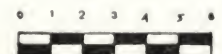
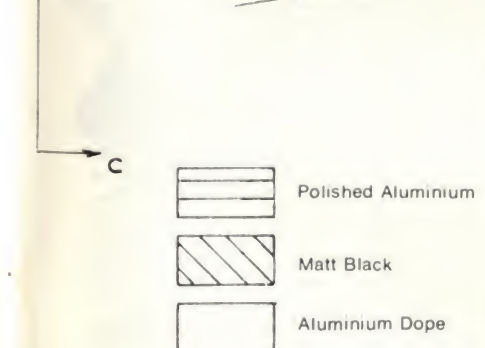
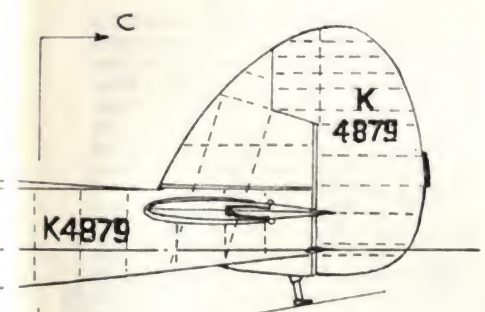
**Dimensions** Span 66 feet. Length 44 feet. Height 10 feet 3 inches. Chord (mean) 8 feet 6 inches. Wing area 568 square feet.

**Weights** Empty 4,391 lb. Loaded 5,310 lb. Wing loading 8.53 lb/square foot.

**Power plant** One 9-cylinder Bristol 'Pegasus' PE VIS with two-stage supercharger.

**Performance** Maximum speed 177 mph at 45,000 feet. 123 mph at sea level. Initial rate of climb 910 feet/minute, 11 minutes to 10,000 feet. Rate of climb at 10,000 feet 900 feet/minute. Rate of climb at 45,000 feet 760 feet/minute. Climb to 50,000 feet 62 minutes. Rate of climb at 50,000 feet 400 feet/minute.

**Production** One aircraft only built, K4879.

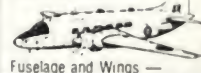


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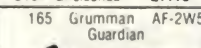
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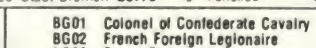
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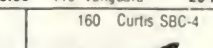
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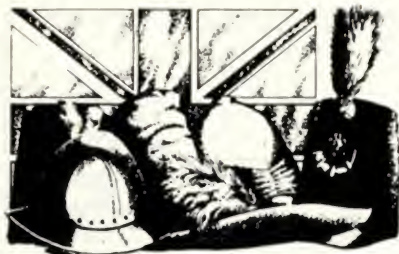
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# british army uniforms

1660-1900

Marlborough's grenadiers by **Bryan Fosten**

CONTEMPORARY written and illustrative material on infantry uniforms of the Queen Anne period are scarce. Antiquarians have to rely on either the De Vos Tapestries in the Palace of Blenheim or Laguerre's wall paintings on the staircase at Marlborough House for what little information can be gleaned.

Yet there is little doubt that even these souvenirs of the period were worked during the period 1710-1712 and it is not known whether the artists had personal experience of the uniforms worn. The Duke is said to have supervised some of the work but in the early part of the 18th Century military fashion was changing rapidly and ten years after the events it is likely that even he would have overlooked anomalies in contemporary style.

The so-called 'first' set of tapestries which were woven circa 1706 is probably the best for accurate costume research for the period. It is known that they were woven especially for the Duke for his Coat of Arms appears centrally in the upper border. It may well be, therefore, that although the scenes of military life do not represent the English Army there can be little doubt that the borders do.

Accepting that is the case, close scrutiny reveals several headdress which help researchers to establish the appearance of the English grenadiers. Even in the later set where a grenadier of the Foot Guards is shown in detail with a stiffened mitre-shaped cap there are still caps in the borders of the same tapestry which are very different indeed.

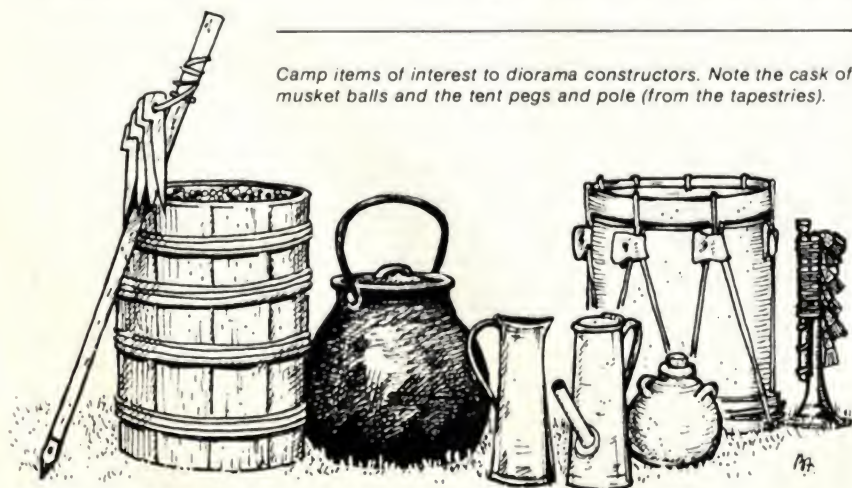
In the border of the tapestry titled 'Campement' there are four such caps. The two on the left have stiffened front parts without any little turned up flaps in front. The fronts of these caps are made in one piece with the part that goes around the back of the head and are trimmed with narrow braid and terminate in tassels on the top. On the fronts there appear to be Royal Cyphers and a Crown in sprays of palm leaves.

The cap itself is a 'nightcap' type of bag with a tassel at the point which folds over and hangs down well below the level of the bottom of the cap.

On the right border are two further caps of a similar stocking cap or 'nightcap' appearance with tasselled ends but in this case with the lower edge trimmed with thick fur, in one case coming to a high point in front.

In the 'Victory' set designed by L. de Hondt we find other examples of these caps. On the top and side borders of 'Donauwert' for example are two further headdress. One has the high, stiff, pointed front with a tassel but has a small turned up flap bearing a grenade. The high front has some form of design on it which is not very clear but appears to be a coat of arms. The back of this cap is a bag sewn to the front and takes the more usual form of the mitre cap.

However, a second cap has an even more unconventional shape. The front remains pointed but with a soft form bending over slightly towards the back with a heavy



*Camp items of interest to diorama constructors. Note the cask of musket balls and the tent pegs and pole (from the tapestries).*

**Facing page** a reconstruction of a grenadier uniform from the tapestries and other sources. Facings are green and lace white and green. Note rear view showing how equipment was worn. The detail views show a variety of grenadier caps from the borders of the tapestries; plus items of equipment taken from the memorial tablet to Sir Charles Wills and the tapestries. Note officer's (left) and sergeant's (right) halberds.



tassel. The back is a bag, separated from the front part but stiff, coming to a point and also bending over slightly backwards with the weight of a heavy tassel. This cap has a little front flap and a similar flap at the rear. The front flap is rounded and the rear one cut square.

The 'Blenheim' tapestry has the same caps in the border even though, as we have said, the Foot Guards' grenadier in the foreground has a conventional mitre cap with the Garter Star on the front.

A close examination of the rearground shows two grenadiers carrying a wounded officer. Although one has the 'Guards' type the other appears to have a cap with a separate bag as described. Although the 'Blenheim' type borders are repeated on the 'Oudenarde' tapestry there are groups of figures in the middle and background showing mitre caps with stiffened backs.

The 'Wyndendaël' tapestry has one major figure with a high fronted fur cap and a further tapestry, in this case entitled 'Embuscade' and now in the New Palace at Schleissenheim, may represent an English regiment ambushing Franco-Bavarians. Figures are shown wearing high-front caps with short hanging bags.

All the infantry coats are shown with full skirts and never hooked back to show the linings. The cuffs are deep and fastened back with large buttons. Some coats are single breasted and some have faced lapels to the waist and turned down collars of the facing colour with or without braid trimming. Other coats have the fronts of the single breasted coats lined with the facing colour which shows when the top buttons are left open and the fronts turn back revealing triangles of colour.

Waistcoats were red (being made from the old uniform coats) and the breeches were either red (from a similar source) or the facing colour. When carrying out fatigue duties the coats were said to have been worn inside out presenting a very odd appearance.

The lower parts of the legs were covered with either woollen stockings or white or black gaiters in some cases with cuffs coming near the knees. Shoes were buckled.

The equipment is based on a figure of a grenadier on the memorial tablet to Sir Charles Wills in Westminster but agrees with the trophies on the borders of the tapestries. □



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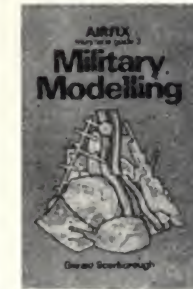
# Christmas

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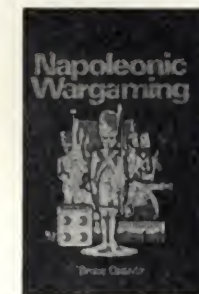
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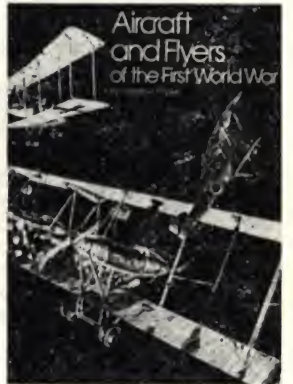
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# squadron codes and colours 1939-1956



By Michael J. F. Bowyer and John D. R. Rawlings

- H4 1653 Conversion Unit (c)**  
These letters were carried by Stirlings of this unit after it reformed at Chedburgh on November 21 1943. Both Mk I and III were used, eg Mk III H4:T-BK763 which served the unit between June and October 1944. It was subsequently carried on the unit's Lancasters, eg H4:J-PB421.
- H5 No allocation known**
- H6 453rd Bomb Group, USAAF (c)**  
Used on B-24s of the 735th Bomb Squadron March 1944 to May 1945.
- H7 346 Squadron (c)**  
346 Squadron formed with French crews to fly Halifaxes on May 16 1944. It briefly flew Halifax Vs, eg H7:G-LL397, and in June 1944 began operating with Halifax IIIs, eg H7:G-NA546. Mk VIs were used from March 1945, eg H7:X-RG607, until the squadron was transferred to the French Air Force in October 1945.
- H8 486th Bomb Group (c)**  
Used on B-24s between April and August 1944 of the 835th Bomb Squadron and between August 1944 and January 1945 on the squadron's B-17s.
- H9 394th Bomb Group (c)**  
Used on B-26s and later A-26s of the 586th Bomb Squadron March 1944 to February 1946.
- H9 Station Flight, Shepherds Grove (c)**  
Allocation confirmed, use not known.
- 2H No allocation known**
- 3H 80 OTU (?)**  
Letters said to be carried on Spitfire IXCs of this unit, eg 3H:J-MH353 and 3H:Y-BS395.
- 4H 142 Squadron (c)**  
Reformed October 25 1944 at Gransden Lodge and equipped with Mosquito B XXVs eg 4H:B-KB444. In August 1945 the

squadron received a few Mk XXXVs, eg TH980, but it is not known whether these ever wore squadron letters.

**5H 416th Bomb Group (c)**  
Used between March 1944 and September 1945 on A-20s and later A-26s of the 668th Bomb Squadron.

**5H Station Flight, Chivenor (?)**  
Said to have been worn by Beaufighters.

**6H 1688 Flight (c)**  
This gunnery training flight formed at Newmarket on March 11 1944. It initially used Hurricane IIcs, eg 6H:S-LF542, then in September 1944 Spitfire VBs were introduced, eg 6H:D-BM134. By November 1944 equipment was six Spitfire VBs, 12 Hurricanes and eight Martinets. Later equipment was eight Spitfire VBs, eg 6H:F-W3180, four Hurricanes and an Oxford. On February 26 1945 the unit moved to Feltwell and to Wyton on March 19 1946 where it disbanded in November 1946. At one time it also used Tiger Moth 6H:K-T7351. Although 6H was the authorised coding, early in its career the unit was flying AF coded Hurricanes from Newmarket.

**7H 84 Group Communications Flight (c)**

Allocation confirmed, details of use not known.

**7H 442nd Troop Carrier Group (c)**  
Used on C-47s of the 306th Troop Carrier Squadron between April 1944 and September 1945.

**8H 8 Group Communications Flight (c)**

Allocation confirmed, but details of use not known.

**9H 492nd Bomb Group (c)**  
Used on B-24s of the 857th Bomb Squadron between May and August 1944. □

A line-up of 260 Squadron Kittyhawks wearing HS coding (IWM).



## Japanese trucks

AS ANNOUNCED here several months ago, Hasegawa have now released two very nice 1:72 scale models of a Toyota starter truck and Isuzu TX-40 fuel truck at 40p each.

These kits must be of interest mainly to aircraft fans and they are to the correct scale to fit in very nicely with a Japanese airfield diorama. Although we have not quite finished construction, both models are far enough advanced to enable our opinion to be offered.

Although naturally some of the detail parts are a little heavy, the components are free of excess flash and fit well together. Parts are also included to make a little trailer and some fuel drums and there are three figures in the fuel truck kit. A bomb trailer and two bombs and three figures are also in the starter truck kit.

Instruction sheets are explicit and in English and at the price of 40p each these represent excellent value for imported kits. As accessories to display with the Airfix Aichi Val, Mitsubishi Dinah, the Zero or any other 1:72 scale Japanese model, they will be invaluable. Kits were kindly supplied by Ren-models, 63 Fitzroy Street, Cambridge CB1 1HF.

## 1:32 scale Bf 110

MAKING AN ideal stable companion for their 1:32 scale Beaufighter, Revell's Bf 110G-4 is a kit that will provide true enthusiasts with many hours of enjoyable work.

Moulded in a very light grey plastic with slightly raised panel lines and well-simulated fabric covered control surfaces, the kit is easily assembled but if it is to be made into a true representative of one of the Luftwaffe's most successful night fighters, a considerable amount of extra work is needed.

The cockpit is very bare and the three decals provided for the main and side instrument panels do little to add the essential air of realism that is necessary on a model of this size. Much time needs to be spent on adding throttles, safety straps, propeller control levers and the 101 other accountrements that are needed to turn the bare shell into a miniature 'office' for the crew. A good guide to this sort of treatment can be found in Bryan Philpott's recent book *Airfix Magazine Guide 2: Aircraft Modelling* (Patrick Stephens Ltd, £1).

Both the Fug 212 and Fug 220(SN-2) nose radar are very delicate mouldings and will soon become victims of careless handling once the model is completed if it is not housed in some form of showcase. The removable nose cone gives access to the twin Mk 108 cannons and the cowlings allow similar inspection of the DB605B engines. Unlike the earlier Mosquito kit, the Bf 110 is provided with two engines so the basic material is there for those who favour super detailing or who maybe want to build a big-scale diorama of, say, an aircraft being serviced.

Nice touches such as these all fall rather flat when the basic shape is examined, because in several areas the Revell design team have come badly unstuck. The most noticeable errors are the shapes of the

# NEW kits and models

fins/rudders and the engine cowlings. The former are more applicable to much earlier marks and the large trim tab common to both F and G models, and well illustrated on the box art, is missing, being depicted as the much smaller version associated with the D and E. This error can be reasonably easily put right — but the engine nacelles! These are completely incorrect for the G and a tremendous amount of work is needed to put them right. This is a very serious shortcoming of the kit but makes conversion to a D or E model very easy!

A serious omission is the lack of underwing fuel tanks, which appear on nearly all photographs of the G, and the model does not somehow look right without them. They can be added by scratch-building or taking two centreline tanks from a pair of 1:32 scale Bf 109G kits, with the carrying cradles fashioned from sprue. This is an expensive way to get an authentic 110 but the effort is worthwhile if you can afford it, as various other parts of the 109, such as the pilot's seat, can be used on the 110 to advantage.

The spinners also appear a little too short and here again those from the two cannibalised 109 kits will come in useful.

Transparencies are beautifully clear and the canopy is moulded in seven separate parts, enabling the model to be displayed with the cockpit open, in which case the earlier mentioned detail work is of course essential.

The colour scheme suggested is rather suspect and if the aircraft depicted is modelled then the Fug 212 radar (parts 102-104) should be omitted. Ideal reference sources are Profile 207 and William Green's *Aircraft of the Third Reich*.

At £2.75 the kit is fair value for money but be prepared to spend a lot of time putting it right if you want an accurate Bf 110G.

## USS Wasp

THE USS WASP was one of ten Essex class carriers and was launched in August 1943, seeing action in the later stages of the Second World War. After the end of hostilities she was extensively modified and fitted with the (then) new angled deck. The Wasp has played an important part in the United States' space programme and was prime recovery vessel for the Gemini spacecraft.

Revell have captured the lines of this 27,000-ton carrier well but the kit is a mixture of good, poor and indifferent mouldings. This leads to a considerable amount of pleasure, frustration and downright annoyance during assembly, but it is well worth sticking to the task in hand as the end result justifies all that might pass before.

One of the major problems, at least on the review sample, was the presence of flash

which was not only confined to some of the smaller components but surrounded most of the major structures. The time spent cleaning this off parts 28 and 26, which are the elevator supports, was considerable, but it has to be done, especially in between the lattice framework that forms the major component of this assembly. The flash that surrounded the Sea King helicopter rotors created endless problems since it was so thick that it had to be cut away with a sharp knife, an exercise that requires patience and dexterity if the rotor blades are to survive!

On the other hand, some of the detailing is superb, especially around the hull and island. Radar aerials, screws, anchors and other small components are nicely moulded but require attention from carefully wielded 'wet and dry' if they are to look authentic.

The instruction sheet is very poor for a model of this size, for although it does not hold too many mysteries for the experienced modeller, there are certain to be a lot

of confused younger modellers leading to impatient non-modelling fathers, uncles, big brothers, or what have you.

The decal sheet is printed in black and white only which is all very well for the deck markings and ship's numbers, but how the serious modeller will justify black national emblems for the complement of Trackers, Skyhawks, Crusaders and Sea Kings, is another matter.

The completed model is over 20 in long and when painted correctly and displayed with its complement of aircraft and miniature Gemini capsule, is sure to be a big attraction. But the work involved to reach this standard will be beyond many of the purchasers of this kit.

## Fujimi Elefant

DESPITE ITS lack of success as an operational vehicle, Porsche's 'Elefant' self-propelled gun has always been a favourite subject with scratch-builders, and Fujimi's new 1:76 scale kit should prove very popular.

Moulded in sand yellow plastic with a plethora of tiny detail parts, the kit is flash-free and assembles very readily into an extremely impressive model. The only problem we encountered was with the road wheel assembly, which is very flimsy, and needs to be allowed to set really firm before any attempt is made to put the tracks on.

A complete 88 mm gun breech assembly is included, which can be seen on the



Reviewed but not illustrated last month. Above Frog Jaguar. Below Tamiya SdKfz 232.





finished model if the fighting compartment hatches are left open. Transfers and paint schemes are provided for two vehicles, one at the battle of Kursk and the other in Italy, and the kit is extremely good value for money even at the rather high price of 65p. Our review sample came from Ren-models of 63 Fitzroy Street, Cambridge, who run a first-rate mail order service.

### BMW and Kubel

BY COINCIDENCE we recently received two kits containing BMW motorcycle combinations and Kubelwagens at the same time from Fujimi (1:76 scale, 60p) and Hasegawa (1:72 scale, 40p), so it seems appropriate to consider them together.

The Fujimi Kubelwagen is accurate dimensionally but is spoilt by the overthick body sides. We see no advantage in separate 'rubber' tyres to the wheels as they only have to be rubbed down to remove the gloss. The body sides were not a good fit around the wheel arches to mudguard join, but this was improved by a little filling and by carving away the internal location bars so that they fitted slightly lower. The BMW and sidecar are vaguely like the originals but not a bit like the box art depicts. The wheels look very 'vintage', not at all like the hefty R 75s should be.

The Hasegawa Kubel is alleged to be 1:72 scale but looks decidedly thin. The wheels are undersized and again fit of sides around the mudguards left something to be desired. A nice point is that the designers have reduced the thickness of plastic along the top edges of the sides to give the impression of scale thickness. This could, of course, easily be copied on the Fujimi kit by carving or filing away. The BMW and sidecar are a little more realistic but could benefit by attention to some of the over-heavy detailing and reduction of the sidecar side thickness along the top edge.

As a further companion we also assembled the combination from a Nitto 1:76 Panther G and BMW sidecar kit, and though the multitude of minute parts and poor fit of sidecar body to floor section did not endear this particular model to us it is perhaps the most convincing of the three. Both Hasegawa and Fujimi include drivers and motorcycle riders with standing 'officers' figures and an assortment of alternative transfer and paint finish schemes.

The Fujimi and Hasegawa kits were supplied by Ren-models of 63 Fitzroy Street, Cambridge, while the Nitto Panther G diorama kit is imported by Richard Kohnstam Ltd, 13-15a High Street, Hemel Hempstead, Herts (see June issue for further details).

### Nitto 37 mm Pak

THIS LATEST kit from Nitto contains a model of the Wehrmacht's well-known 'door knocker' 37 mm Pak 35/36 anti-tank gun used in the early battles of the Second World War, and a set of German infantry weapons and equipment, all to 1:35 scale. The gun is very nicely produced and incorporates the sliding breech block common to most German artillery pieces, but rarely provided as a working feature on models.



Above a collection of tiddlers! Top are the Hasegawa 1:72 and Fujimi 1:76 scale Kubelwagens, while at bottom are (from left to right) the Hasegawa, Nitto and Fujimi BMW combinations. Below Hasegawa M24 Chaffee.



The sprue of weapons and equipment is similar to those which Tamiya do so well and is fairly original, including a Panzerschreck rocket launcher and a 10 cm GrW35 (originally a smoke projector, later issued to airborne troops with HE shells), together with MG34 and 42s, and rather poor replicas of the Kar 98K, MP40 and MP43.

Importers of this kit are Richard Kohnstam Ltd, 13-15a High Street, Hemel Hempstead, Herts, and price is a very reasonable 49p.

### M24 Chaffee

THE CHAFFEE light tank only just entered service in time for combat during the closing days of the Second World War, but saw extensive service during the Korean War. Hasegawa's new 1:72 scale kit of this attractive little vehicle is a useful addition to any collection and should also prove popular with conversion enthusiasts since the chassis was used as the basis for quite a family of SPGs etc.

Fit of parts is generally good although the occasional lack of definite location points

could be a snag for the inexperienced modeller. The tracks are too thick and stiff and not a good fit around the sprockets, further complicating matters. Nevertheless, at 40p the kit is good value for money. Our sample was supplied by Ren-models of Cambridge.

### Tamiya figures

THREE NEW SETS of 1:35 scale figures in plastic from Tamiya, each containing eight figures for 70p. These are: German assault troops, German artillery troops and British 8th Army troops. Modellers who possess figures from the earlier smaller sets need not worry — these are all brand-new except for the artillerymen who have escaped from the '88 kit.

All of these figures and their accompanying weapons and items of equipment are excellently moulded and well up to Tamiya's usual high standard: our only comment is that the Germans should have their necks shaved up to the top of their ears; while the 8th Army puttees should be smooth below the woollen stocking tops (they were khaki cloth, not wool).

# MODELS

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- 23: Phantom F.G.1, 43 Sqn. Harrier G.R.1A, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF.
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- 26: Hunter FGA.9, XF442, 'B1' 58 Sqn. RAF, 1974.\*  
Buccaneer S2B, XW526 'A', 15 Sqn. RAF, 1974.\*  
Gazelle HT3, XW855 'B' CFS, HEL, Wing, RAF, 1973.  
Gazelle HT2, XW857 '66' 705 Sqn. FAA, 1974.  
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\*These Aircraft are in the RAF current Tactical Schemes. ★  
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## Napoleonics

**Airfix Magazine Guide No 4: Napoleonic Wargaming**, by Bruce Quarrie. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. **Price £1.20.**

THE AUTHOR'S avowed intention in this book is to 'answer all the questions which puzzled me when I began Napoleonic wargaming', in which he has been remarkably successful considering the amount of information which has been squeezed into the book's 64 pages.

The book begins with an introductory chapter explaining how wargaming with model figures works, making a wargames table, creating scenery, and describing the basic rules of time, space and scale. Unlike other authors writing about wargaming who try to over-simplify matters, Bruce has pulled no punches in introducing readers immediately to the widely accepted 1mm:1 yard ground scale and 1:33 figure:men ratio used to scale down wargames units, meaning that anyone who has read this book will be able to join practically any club in the country and understand what is going on from the word 'go'.

Perhaps the most useful section for most readers will be the second chapter. This describes in concise detail the organisation, equipment, strengths, national characteristics and leadership of the five major armies of the Napoleonic Wars, French, Austrian, Russian, Prussian and British, with briefer notes on some of the smaller nations. Not only are the armies compared in some detail, but their different organisations at different periods are also discussed, and precise guidelines for scaling these down in wargames units are also provided. The value of good leadership is also mentioned, and there is a table giving suggested 'leadership values' for over 40 Napoleonic marshals and generals.

The third chapter describes how an actual wargame works, relates how firing takes place, melees occur and morale is assessed. This is illustrated by a sequence of photographs showing an actual wargame in progress. Move by Move, with captions explaining what is happening at each stage. The author then moves on to a discussion of Napoleonic strategy and tactics, with line drawings showing the most common Napoleonic tactical formations. These are then related to the wargames situation with a short discussion of tactics on the tabletop.

The last chapter describes how to organise a Napoleonic campaign between four or more players, each of whom is given

command of a country. This includes discussion of march rates, supplies, engineering work, orders, messengers, recruitment and even technical invention.

Finally there are two appendices: the first is a complete set of playing rules which includes fire, melee, morale, control and movement ratings for each of the 'big five' powers, in which each troop type is assigned a different value according to its historical performance and capabilities. There are special rules for small arms and artillery fire, movement over difficult terrain, fighting in buildings, the conduct of a charge and melee, and morale assessment, with specially prepared tables giving casualties and troop reactions under differing circumstances. These rules are not the simplistic variety laid down in many books on wargaming, but are an up-to-date, well-researched and detailed set, enabling beginners to get off on the right foot and more experienced players to add extra realism to their games.

The second appendix lists the main model soldier manufacturers and their addresses, plus a short bibliography for further reference. Excellent value for money and practically guaranteed to become a standard work on the period.

## American Civil War

BOTH *STRATEGY & Tactics* and *Conflict* magazines have just appeared with special American Civil War features and games, so it seemed appropriate to consider them together.

S&T No 43 leads off with a long feature article on the war, its strategy, the opposing armies and their organisation, the war at sea and on the rivers, the leadership, industrial production, politics and diplomacy, the battles and the results. As with all the articles in S&T which attempt to cover too much ground at once, this feature lacks depth but is nevertheless a good introduction to the subject, and leads naturally into the issue's game feature.

This is played on the usual hexagonally gridded playing map, which depicts the area from the east coast of America, as far west as Missouri, Arkansas and Louisiana, and as far south as Florida. Units are represented by the normal die-cut cardboard counters, and include land, sea and river forces, plus leaders. The game is a strategic one re-creating the entire war, and although complicated is very playable and by far one of the most engrossing games S&T have designed for some time.

Movement is carried out on a seasonal

basis, the entire game occupying 16 moves, and different movement rates applying at different times. Combat is standard, each counter containing a number representing its fighting strength in attack or defence. The usual terrain bonuses and restrictions apply, units in towns or forts gaining defence points and so forth. Rail movement of troops is permissible and adds further interest, especially since railway lines may be cut.

Other interesting points of note in this game are the effects of border states changing sides, of European recognition of the Confederacy, and of European intervention in the conflict, permitting endless permutations. A very good game.

This issue of S&T, which costs £3.99 from Simulations Publications UK, PO Box 46, Altrincham, Cheshire WA15 6PE, also includes a second feature article on 'the Soldier Kings', which will be of interest to all who follow George Gush's Renaissance Warfare series. This is a discussion of warfare, weapons, strategy, tactics and especially leadership during the period 1550 to 1770, taking in not only the renaissance period but also the later Marlburian and Seven Years' Wars.

Complementing the general commentary are modular features on weapons and tactics 1525-1630, the Dutch Revolt, 30 Years' War, the army of Gustavus Adolphus, siege warfare, weapons and tactics 1670 to 1760 and the Blenheim Campaign — an unusual and valuable mixture showing the development of warfare throughout this significant period.

*Conflict* No 7 is complementary to this issue of S&T but may be difficult to obtain since Simulations Publications UK are no longer importing the magazine because the American publishers seem unable to keep to a regular printing schedule. However, odd copies may be available if you write to the address given above.

This particular issue contains a main feature article on firepower and tactics during the ACW, which includes some very useful and clear diagrams showing formations and formation changes for infantry, cavalry and artillery, notes on the types of ammunition used, different designs for redans and other field fortifications, together with descriptions of the campaign for Forts Henry and Donelson, and a select bibliography.

Apart from other features on various aspects of wargaming, this issue of *Conflict* also includes two board games. The first is a game on a regimental level called 'Rifle-Musket' and simulates grand tactics during the ACW on a fairly basic level, while the other is an enjoyable game — with the emphasis on the word 'game', since it is not at all realistic — depicting the defence of the Alamo. All good fun and just the thing for a bored wargamer.

## Moves

TWO COPIES OF *Moves* magazine, distributed in Britain by Simulations Publications UK, PO Box 46, Altrincham, Cheshire WA15 6PE, have recently arrived for review. *Moves* is complementary to *Strategy & Tactics*,

and contains reviews and playing notes on S&T, Conflict and Avalon Hill wargames, discussion features about various aspects of wargaming, plus addenda and errata notes to the rules published with individual games.

*Moves* No 13 contains a main feature profile on the game 'NATO', a review of the year 1973 from Simulations Publications' viewpoint, designer's notes on various existing and forthcoming games, and two pages of Feedback analysis.

*Moves* No 14 contains a main feature on the two similar games 'Kampfpanzer' and 'Desert War', together with some additional scenarios which wargamers can use in conjunction with these games; an interesting article on how to design a wargame; notes on having more than one commander on the Union side during the second 'Bull Run' game, reviews of new games, Feedback results etc.

As we have mentioned before, *Moves* is really only of value to the completely dedicated enthusiast. It costs 85p per issue or £3.60 for a year's subscription (six copies).

## Kasserine Pass

SUB-TITLED 'Rommel hits the Yanks', this is a new Conflict boardgame which re-creates Rommel's victory over the Americans in Tunisia in 1943.

Attractively packaged in a stout cardboard box, it contains a hex-gridded playing map of the area surrounding Kasserine, die-cut cardboard counters representing armoured, infantry, reconnaissance, engineer, anti-tank and anti-aircraft units, playing rules, combat results tables and two dice.

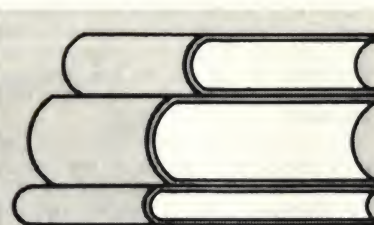
It is basically a tactical game at a fairly simple level, standard in its rules and fast moving, but like all these Conflict games rather highly-priced — in comparison with SPI games — at £4.75. 'Kasserine Pass' is available from Simulations Publications UK, PO Box 46, Altrincham, Cheshire WA15 6PE.

## Bar-Lev

PERHAPS THE most interesting of recent Conflict games releases, this boxed board game seeks to re-create the Yom-Kippur War of 1973. It is also more complex than most Conflict games, contains two playing maps representing the Egyptian and Syrian fronts, and is altogether better value for money than 'Kasserine Pass'.

Die-cut counters are provided for Israeli, Egyptian, Syrian and other minor Arab forces, very attractively printed with tiny silhouettes of the type of vehicle each represents. The game can be played as a straightforward land conflict, or the vital element of air support brought in through the use of optional rules and the additional playing counters provided.

Altogether this is an intriguing — though still easy to play — game which well illustrates the tactical problems of modern conventional warfare, and the tremendous logistical problems forced on the Israelis by a war on two fronts. We have no hesitation in recommending this game highly. Price is £4.75 again from Simulations Publications UK.



## Modelling

**Airfix Magazine Guide No 3: Military Modelling**, by Gerald Scarborough. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. **Price £1.20.**

GERALD SCARBOROUGH'S super 1:76 scale military conversions will be well-known to most readers of this magazine (even though he hasn't had time to write many articles recently since beginning work on these books!). As with many people, his interest in military modelling began several years ago when Airfix released the first in their new range of AFVs to 1:76 scale, and he now brings the benefits of his experience to a wider readership through this book.

An introductory chapter explains the various tools and materials needed for successful modelling, and their use. This is followed by a chapter on 'soft-skin' vehicles which includes scale plans, photos and modelling details for an Austin K3/YF, Bedford OY 4 x 2 GS, Austin K6 6 x 4 breakdown gantry, K6/ZB signals/wireless van, CL-T troop carrier, AEC crane, Bedford tanker and semi-trailer, a YMCA tea car (!) and a Scammel 10-ton heavy breakdown vehicle.

Gerald then provides a chapter on armoured cars and half-tracks which includes modelling details for an M5 half-track, T12 75mm GMC, SdKfz 7/6 Mittlerer Flakmesstrupwagen, Mittlerer Zugkraftwagen 8-ton mit 3.7cm Flak 36, a correct SdKfz 234/4 and a Puma armoured car. Once again, complete 1:76 scale plans and numerous photos show exactly how to construct these models.

The fourth chapter is on tanks and other fully-tracked vehicles, and includes details for making an M4 Sherman with applique armour, M4A2 British Sherman III, a Crusader camouflaged as a lorry as used in the desert, two Crusader anti-aircraft tanks, a Churchill Mk 1, Buffalo carpet-layer, Matilda bulldozer, Panther Ausf A, D and G, Sturmgeschütz IV (L48) and PzKpfw IV D.

A useful bibliography and addresses of scale plan suppliers completes this most valuable book for all military modellers, which is excellent value for money at only £1.20.

**Aircraft and Flyers of the First World War**, by Joseph A. Phelan. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL. **Price £2.95.**

VIRTUALLY EVERYTHING anyone could wish to know about First World War aircraft and aerial combat is included in this lavishly illustrated book! The wealth of detail and the high quality of the several hundred illus-

trations make it a publication no serious aviation enthusiast, modeller or wargamer with an interest in this fascinating period can afford to miss.

Originally published under the title *Heroes & Aeroplanes of the Great War 1914-1918*, this new edition is far more than a basic guide to the Camels, Albatrosses, Nieuports and other aircraft of the First World War. Its scope ranges over fighters, bombers, reconnaissance aircraft and seaplanes to Zeppelins, observation balloons, aircraft carriers and anti-aircraft weapons.

Beginning with a brief account of the causes and opening stages of the war, the book goes on to describe the state of the major air forces of Europe at the start of the conflict, the aircraft then in use, their camouflage and markings.

The development of aircraft design and aerial tactics during the war are then covered in some depth, while there are also extensive reports of actual 'dog fights', biographies of many of the leading aerial warriors such as von Richthofen, Mannock, Rickenbacker and Fonck, and a listing of the aces of the major powers.

Over 100 of the illustrations in this fascinating book are reproduced in full colour, including aircraft side and plan views invaluable to modellers, making it superb value for the very low price of £2.95.

**Classic Ships No 3, Cutty Sark**, by Noel C. L. Hackney. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL. **Price £1.95**

PUBLICATION OF this latest volume in PSL's popular classic ships series, which describes not only the history of the ship concerned — in this case the Cutty Sark — but also how to super-detail and make a museum-quality replica using the Airfix construction kit as a basis, has been delayed and it will not be on sale until November 15. We shall be reviewing the book next month.

**Aircraft Model Special**, edited by Chris Ellis. Ducimus Books Ltd, De Worde House, 283 Lonsdale Road, Barnes, London SW13. **Price £1.25.**

IT IS DIFFICULT to know how to categorise this publication; its price suggests it ought to be a book, but its presentation, together with the promise in the introduction that there are further *Aircraft Model Specials* in the pipeline, indicates that it is really a magazine. This is a quibble, however, because whichever way you look at it, it is a worthwhile venture.

Its 48 large-format pages in black and white, plus three full-colour pages, contain a selection of articles on aircraft modelling, together with a large number of photo-



graphs of actual machines, scale drawings and colour notes.

Contents include South African Sabres, FW200 Condor colour schemes, modelling the Hispano 1112-M1L Buchon, Meteor NF14 and Warhawk; Me 262 single-seaters and the Boulton-Paul P64, a varied and intriguing selection.

Most of the author's names are familiar — Las Whitehouse, Alan Laird, Dave Becker, Richard Gardner, Mike Gething and Alan Butler — and Chris Ellis has assembled their talents to good result. How about a *Military Model Special* next?

### Aviation

Aircraft Profile No 252, **Grumman A-6A Intruder and EA-6B Prowler**. Profile Publications Ltd, Coburg House, Sheet Street, Windsor, Berks. **Price 55p.**

THE CHARM of this rather ugly and somewhat unlikely looking strike aircraft is difficult to define. Truth is, the Intruder is a fascinating beast and this beautifully produced Profile certainly does the aircraft justice.

Tracing the history of this rugged puncher from its introduction as the A2F-1 to the extensively modified EA-6B Prowler electronic warfare aircraft, Kurt Miska tackles what could have been a dull subject in an expert way. His description of DIANE, the aircraft's all-weather navigation/attack system, is very good, and the lists of variants of the basic aircraft are invaluable.

Complementing the text, the photographs are excellent, the cockpit shot on page 141 being particularly useful. But the best by far is the colour artwork: Messrs Trim, Hadler and Palmer have managed to produce some of the best colour drawings we have ever seen in an Aircraft Profile.

All in all there is plenty of scope in the Profile for modellers and it should be essential reading for all students of the Vietnam War.

**Air Defence of Great Britain**, by John R Bushby. Ian Allan Ltd, Terminal House, Shepperton, Middx. **Price £3.30.**

THIS IS THE story of our response to air attack and the threat of air attack from 1915 to the present day. Despite the somewhat daunting title, John Bushby makes this story live. From the effects of the first German bomb to fall on Britain in 1915, the reader is taken through the drama of war-time defence and action against the Zeppelins and Gothas to the equally deadly political in-fighting of the peacetime period.

Particularly interesting is the description of the decoy airfields and aircraft used during the Second World War — a nice diorama subject, this — proving that deception defends.

The later vivid description of an interception by a Strike Command Lightning fighter betrays the author's close connections with his subject, as he was a one-time fighter controller with the RAF.

Though very good reading and background material, it is doubtful whether the modeller will find sufficient of interest in this book to justify its purchase. However, for the student of aeronautical history and warfare, it could well become a standard reference.

Purnell's History of World Wars — Specials, **Bombers 1914-1939** and **Bombers 1939-1945**, by Bryan Cooper and John Batchelor. Macdonald & Jane's, Paulton House, 8 Shepherdess Walk, London N1 7LB. **Price 55p each.**

BOTH THESE BOOKS would make ideal reference books in particular for the younger modeller as they are full of John Batchelor's fine illustrations, mostly in colour, very clear and technically what we have come to expect from this 'professional'. Bryan Cooper's history of the developments in 'bombing' from the first primitive attempts to knock the enemy on the head to the total destruction and pinpoint accuracy occasionally achieved in the Second World War makes an absorbing story spread over the two volumes. At today's prices these must be good value.

### Military

**Napoleon's Army**, by Colonel H. C. B. Rogers. Ian Allan Ltd, Terminal House, Shepperton, Middx. **Price £3.15.**

THIS NEW BOOK will prove invaluable to all military students, wargamers and Napoleonic aficionados. Meticulously researched and extremely well documented, it is a detailed guide to the origins, organisation, uniforms, leadership, strategy, tactics, equipment, campaigns and flags of the French Army from 1789 to 1815.

The book opens with a brief account of all the campaigns in which the French Army took part during this period. Although 'potted', this chapter serves as a useful memory aid for existing Napoleonic students or an invaluable primer for newcomers to the subject.

Succeeding chapters consider in considerable depth the French cavalry, infantry, artillery, engineers and signals, administration, medical corps and Imperial headquarters. Each chapter describes the changing organisation, strength, equipment, uniforms and flags, together with some very interesting accounts of the troops in action taken from contemporary sources. Our main query in all this is with the author's description of French artillery organisation, where he claims the standard battery comprised six 6-pdrs and two 5.5 in howitzers, whereas we had always understood 8 pdrs and 6 in howitzers to be the norm. Readers' comments on this are welcome.

Finally, to give a more detailed picture of the French Army in battle, Colonel Rogers devotes two chapters to a penetrating account of Davout's III Corps' campaigns, leading up to the battles of Auerstadt and Eylau, a much-neglected topic. It is high time Davout was accorded the recognition he deserves as by far Napoleon's best Marshal.

There are no colour illustrations inside this book, unfortunately; but there are a very large number of extremely interesting contemporary prints and engravings which give a much clearer picture of what Napoleonic warfare was really like than any modern illustrations. These are especially

good on the rather neglected early period of the wars — as is the text.

All in all this book looks all set to become a standard work on the period, and should be a priority purchase for all Napoleonic enthusiasts.

**Military Dress of the Peninsular War**, by Martin Windrow and Gerry Embleton. Ian Allan Ltd, Terminal House, Shepperton, Middx. **Price £5.95.**

ANOTHER SUPERLATIVE volume for the Napoleonic enthusiast, military modeller, historian and wargamer from Ian Allan. Produced to the same format as the same authors' earlier *Military Dress of North America*, this is a lavishly produced hardback containing a hundred of Gerry Embleton's magnificent full-colour uniform paintings, a well-detailed and documented text, and numerous black-and-white illustrations both from contemporary sources and preserved uniforms in museums and private collections.

Despite its title, the book is far more than just a guide to the uniforms of the French, Spanish, Portuguese and British troops involved in the Iberian Campaign of 1804-14; it is also a revealing study of the campaign itself, the men who fought it and the hardships they laboured under. Analyses of the various encounters, backed by facts, figures and Orders of Battle as well as clear maps, make the book invaluable for wargamers specialising in this popular period, as well as a useful reference for the serious military student. One point worthy of note is that the authors have on several occasions provided information on the uniforms of specific units involved in a clash, with details of the action in question, deliberately aimed at the diorama modeller.

The publishers claim that 'no collection of books on the Napoleonic Wars — or on the evolution of military costume in Europe — is complete without this wide-ranging, readable and beautifully illustrated study', and for once this naturally biased statement is completely justified.

### Railways

**The Majesty of British Steam**, by George F. Heiron. Ian Allan Ltd, Terminal House, Shepperton, Middx. **Price £5.95.**

POSSIBLY THE main difference between a coloured photograph and an artist's portrayal of the same subject is that the artist is more able to capture the rather indefinable factor of 'atmosphere', and this is the main quality of this book. The author has recreated in meticulous detail the railway scenes which are no more than ancient history or treasured memories for a large number of people. For younger readers especially, the illustrations will convey the impressions more adequately than words.

The book contains 48 plates, only two of which have been previously published, covering some 50 years of steam locomotives, from the great Single drivers to British Rail's Pacific Britannia. Majesty is the only word which could have been chosen for the title of this book, which we have no hesitation in recommending to all enthusiasts, young and old.



## letters to the editor

### Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

### Lightning conversion

AFTER WORKING ON a two-seat trainer conversion of the Airfix Lightning F1, I found a good use for the sawn-off nose section of the kit.

I sawed off the nose of the Frog/Hasegawa Lightning F6 just forward of the windscreen coaming. The discarded Airfix Lightning nose section, with its two gun ports at the top, was treated in the same way.

Then, after filing and sanding each saw cut to ensure alignment, I mated the Airfix nose with the Frog/Hasegawa fuselage to produce the Lightning F2A of 92 Squadron in tactical markings, as featured on one of the latest Modeldecals sheets. The 'marriage' is almost perfect, but some body putty is needed to eliminate the join line. This method would be suitable for any modeller who doubts his ability to add the two gun ports to the Frog/Hasegawa nose.

The Frog/Hasegawa nose cone can be used on the mated Airfix nose, but I find that the Airfix cone is a better fit. The Airfix gun ports, incidentally, need some reshaping in accordance with the Modeldecals sketch.

The arrestor hook for the Lightning F2A (and for Lightning F6 models) comes from stretched sprue. Alternatively, it could be modified from the hook in the Frog/Hasegawa Skyhawk.

**Brian Redhead, Bedale, Yorks.**

### Bodenplatte

I HAVE BEEN commissioned to write a book detailing the events of New Year's Day 1945, when nearly 1,000 German aircraft made surprise low-level coordinated attacks (code-named Operation 'Bodenplatte') on Allied tactical airfields in Belgium, Holland and Northern France.

Little has been published in the English language on these spectacular raids. Aircraft losses were heavy on both sides. Anti-aircraft claims by the RAF Regiment, 21st Army Group, 1st Canadian Army and various American ground formations were particularly impressive. Generalleutnant Adolf Galland was later to comment that 'Bodenplatte' was 'the last dagger thrust in the back of the Jagdwaaffe.'

I would be grateful if eye-witnesses then serving with the Allied forces (or the Luftwaffe) in North-West Europe could contact me. Particularly useful would be the loan of diary entries or notes jotted down immediately after the attacks took place. I am also anxious to trace personnel who examined wrecks of downed German aircraft on behalf of Air Technical Intelligence, or helped interrogate the 63 Luftwaffe pilots captured on this day.

Many snapshots (as well as official photographs) must have been taken of the damage inflicted by enemy action and the scores of German fighters lost on the operation. Here again, contact with readers holding such photographs would be most welcome.

**Richard P. Bateson, 8 Lawford Road, Chiswick, London W4 3HS.**

### Wargames table

EUREKA! I BELIEVE I have found an answer to the wargamer's eternal problem, namely the wargames table: 8' x 4' x 2" foam-styrene sheets, available at most good wood yards. The particular beauty of this material is initially its cheapness, but moreover, its physical properties. Styrofoam may, in effect, be very easily 'carved' enabling the wargamer to work down as well as up in producing accurate relief, trenches, dead ground and so forth. And with the application of a little Polyfilla or Plasticine afterwards, the board may be returned to its original state ready for the wargamer's next choice of a completely new topography.

Further, the acetone in the paint of aerosol spray cans 'melts' styrofoam such that two wargamers may choose ends of the table, the board is then sprayed resulting in instant hills and gullies and the game commences over a relief neither has had a hand in creating. Hence a truer simulation of actual battle conditions may be achieved, which is, after

all, the whole object of wargaming. Though the use of spray paint produces two fixed terrains (one per side), they may be varied with the addition of forests, rivers, etc. Nevertheless, foam-styrene sheeting is one cheap, effective means of playing a wargame!

**R. H. Wardle, Ontario, Canada.**

### 603 Squadron

I AM ENGAGED in collecting material, for which eventual publication is envisaged, concerning the history of No 603 (City of Edinburgh) Squadron, Royal Auxiliary Air Force, and wish to appeal through your publication for contact with former squadron members.

Required are photographs, personal reminiscences, log-book extracts, etc., covering the period of the squadron's existence, from 1925 until finally disbanded in 1957. All material would, of course, be carefully handled, and returned after copying. **Ian McConnell, 19 Glendale, Boxmoor, Hemel Hempstead, Herts HP1 1TG.**

### Wrong page

READERS wondering where the captions for the drawings on page 91 of the October issue got to will find them on page 92; pages 91 and 93 were printed the wrong way round! Sorry.—Ed.

### Your queries answered

IN ORDER TO help prevent delays and confusion, will all readers intending to write to *Airfix Magazine* please note the following information and post their letters to the appropriate address.

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Any query, comment or suggestion regarding Airfix kits or games should be sent to: Airfix Products Ltd, Haldane Place, Garratt Lane, London SW18 4NB.

All queries or payments for *Airfix Magazine* subscriptions and back numbers should be sent to: Subscription Department, *Airfix Magazine*, Surridge Dawson & Co (Productions) Ltd, 136/142 New Kent Road, London SE1.

All queries regarding items mentioned in advertisements should be addressed to the appropriate advertiser(s).

All queries, comments and suggestions regarding models manufactured by companies other than Airfix should be addressed to the appropriate manufacturer.

All queries regarding display advertising should be addressed to: Mr S. C. Sullivan, Advertising Manager, *Airfix Magazine*, Jackson Rudd & Associates Ltd, Martin House, 84-86 Grays Inn Road, London WC1.

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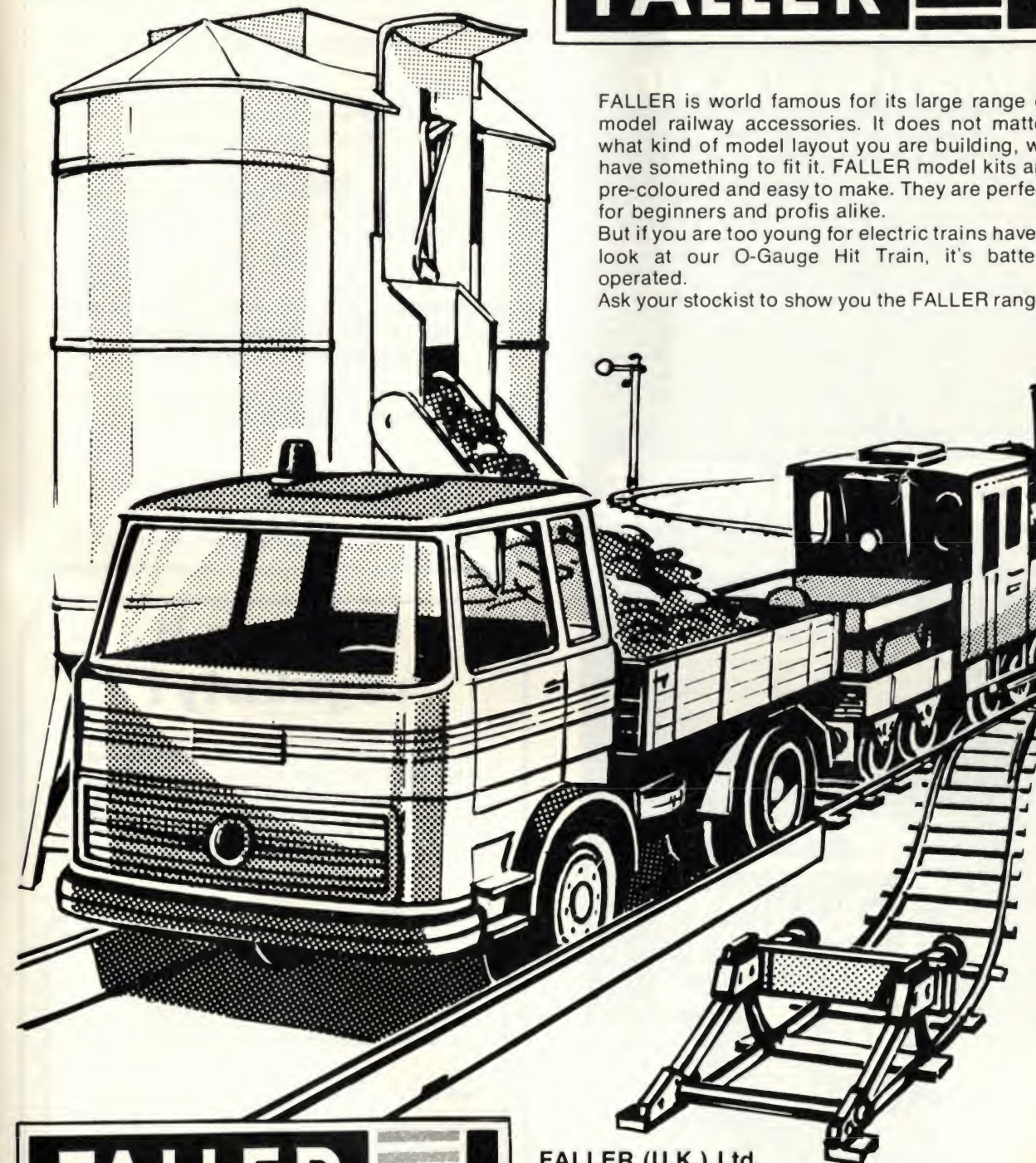
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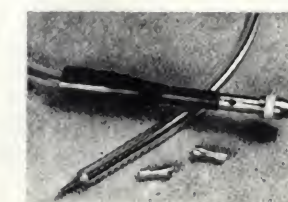
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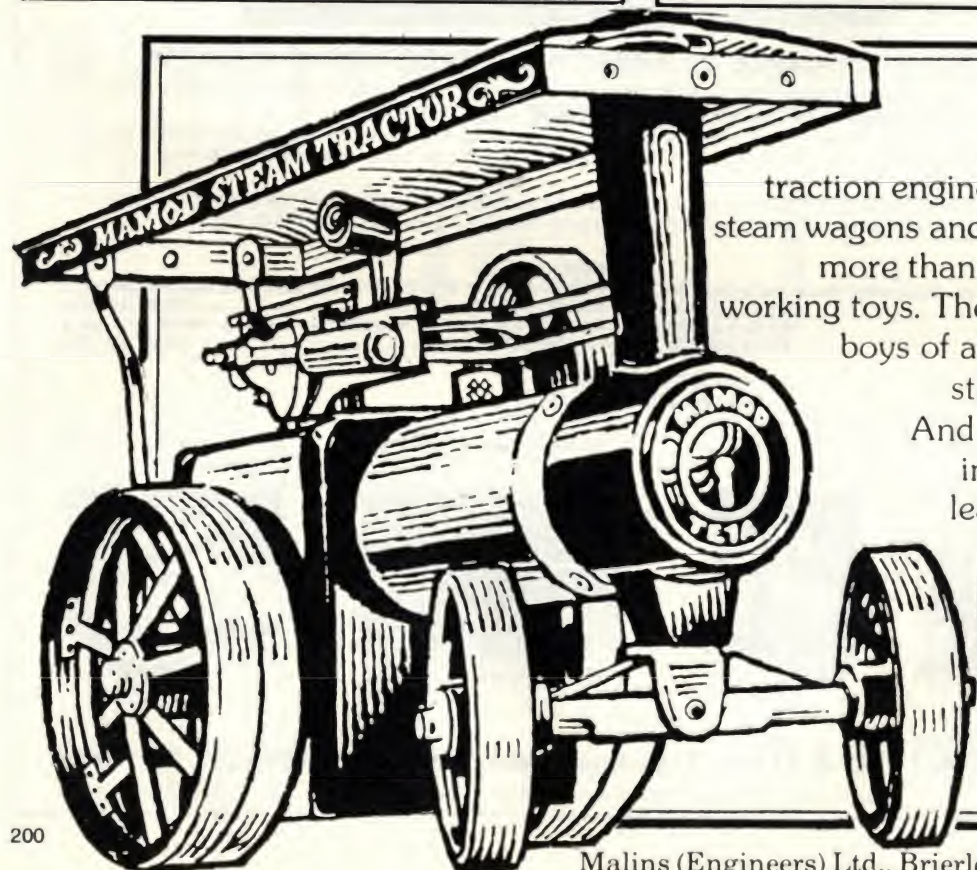
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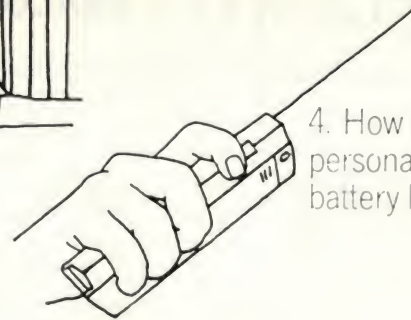


2. Do policemen who stand outside No. 10 Downing Street come from a specialised branch of the police force?

3. What does a blue band round a police cap denote?



5. Would you ever see a policeman dressed like this?



4. How long does a personal radio battery last?



This is the fourth in a series depicting the background, present-day working and development of Britain's police. If you missed any previous ones and would like copies, or would like further information about the police, please write to: Police Quiz, Dept 13, Home Office, London SW1A 2AP.

1. Yes, in an emergency.
2. No, it's a normal part of police work.
3. The wearer, aged 16-18 is a cadet.
4. Approximately 1 year—they are, of course, rechargeable.
5. Yes, a number of police forces have underwater search units.

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